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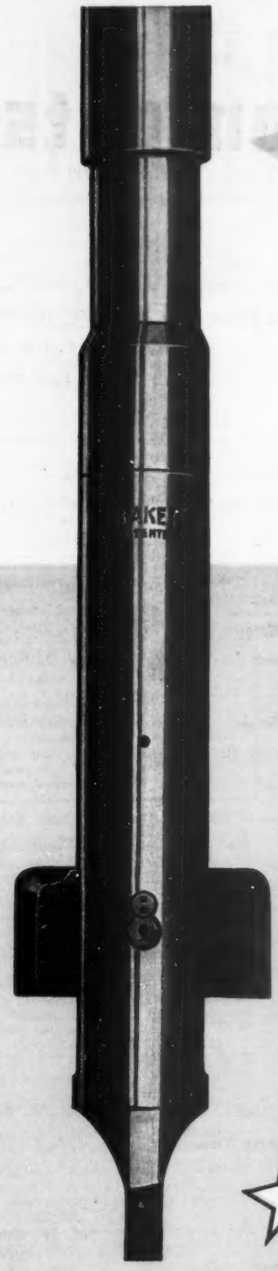
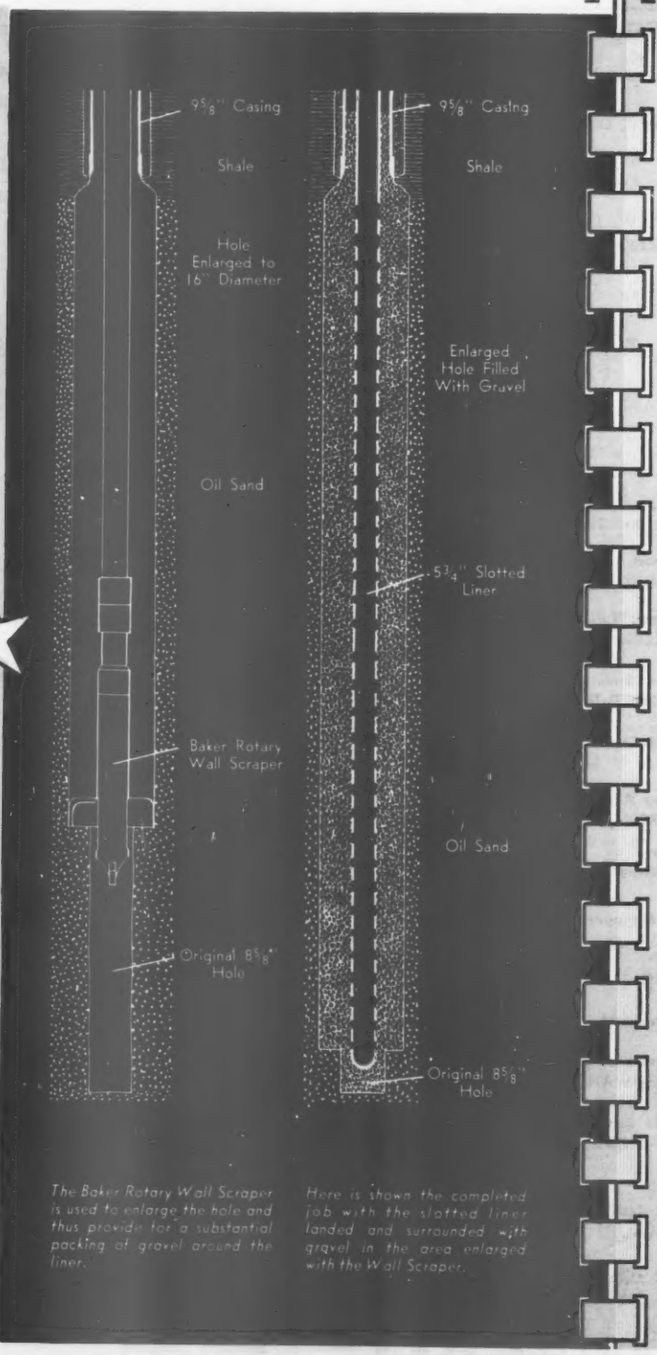


ENLARGING THE HOLE FOR GRAVEL PACKING

One of 12 Practical Field Applications for the BAKER ROTARY WALL SCRAPER



The Baker Rotary Wall Scraper is used to enlarge the hole and thus provide for a substantial packing of gravel around the liner.

Here is shown the completed job with the slotted liner landed and surrounded with gravel in the area enlarged with the Wall Scraper.

Send for Baker Broadcast No. 19

BAKER ROTARY WALL SCRAPER

BAKER OIL TOOLS, INC.
P. O. Box 127, Vernon Station
LOS ANGELES, CALIFORNIA
HOUSTON, TEXAS
NEW YORK, N. Y.

The BAKER ROTARY WALL SCRAPER...

Provides a safe, efficient means of enlarging the walls of an open hole to a diameter considerably greater than the casing or hole through which the tool is run.

REMARKABLE REAMING CAPACITY

One of the outstanding features of the Baker Rotary Wall Scraper is its remarkable reaming capacity in relation to the O. D. of the tool. It has a maximum expansion range on the blades of from 4" to 36".

SAFETY

The safety of this tool has been ably demonstrated in the thousands of successful runs made in oil fields throughout the world under most adverse operating conditions.

TWO TOOLS IN ONE

WALL SCRAPER 2 TOOLS IN WALL SAMPLER

The Baker Rotary Wall Scraper is really "two tools in one" since by merely substituting Sampler Blades for the regular Scraper Blades the tool is converted into a Baker Rotary Wall Sampler . . . an exclusive Baker feature. With this device it is possible to take actual cores from the side walls of any uncased hole at any depth.

Important Applications

Enlarging Holes for Casing

Cleaning Up Oil Sands

Setting Liners

Setting Cement Plugs

Bottlenecking for Cement Jobs

Removing Sections of Drillable Pipe

Water Shut-Off Tests

Sidetracking

Straightening Holes

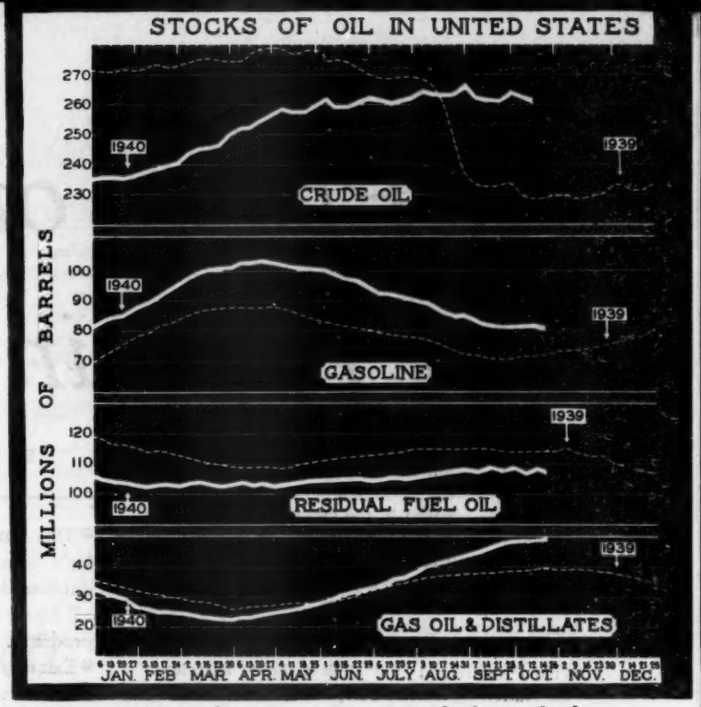
Fishing Jobs

Enlarging Holes for Gravel Packing

Side Wall Sampling (by converting Scraper into Baker Wall Sampler)

Trends

Changing Concept of Crude Values Lowers Premium on Gravity



CONTRACTION of the premiums long enjoyed by high-gravity, high-gasoline-yielding crude oils emphasizes again the growing importance of fuel products in economics of the petroleum industry. The impression has wide following that the whole concept of crude-oil values may necessarily undergo a change in the not-distant future.

Growing value is being assigned to the quality of gasoline obtainable from various crudes with corresponding diminution in the importance of quantity. Emphasis was given to this changing concept of crude values at Dallas last week during the I.P.A.A. annual meeting. Lobby discussions of selective crude buying invariably turned to the octane value of gasoline obtainable from various oils.

Two developments of recent years—one is even more current—contribute to the changing crude values. The growing demand for fuel oil has removed to some extent the blight on heavy crudes yielding relatively small quantities of gasoline. Some of the low-gravity, low-gasoline-yielding crudes produce motor fuel of high octane value. On the other hand, some low-gravity crudes yield inferior gasoline and their attractiveness is essentially limited to relatively high fuel-oil fractions. It follows that low-gravity crude may measure up to both standards of value.

Demand for high-octane gasoline has been accelerated in recent months by the defense program. The industry is just now swinging into stride in production of defense quantities of 100-octane and other aviation motor fuel. This presages even greater emphasis on the quality of gasoline recoverable by existing refining equipment.

This week the industry had two new yardsticks by which to measure future operations. There is substantial disparity between the estimated crude-oil requirements in November charted by the Bureau of Mines and the I.P.A.A. committee on balance of supply with demand. The bureau-estimated demand of 3,570,000 bbl. daily in November makes no provision for liquidation of stocks. The I.P.A.A.-recommended plateau of 3,470,000 bbl. daily for the final quarter, on the other hand, visualizes gasoline stocks of 70,000,000 bbl. on December 31.

In either case, the industry is operating at a level substantially higher than even the more liberal figure. Production advanced more than 32,000 bbl. in daily average last week but was more than 100,000 bbl. below the daily average output a year ago. Utilization of current statistical studies now resolves into a question of whether the industry will make the retrenchment necessary to remove more than 10,000,000 bbl. of gasoline from storage over the next 2 months.

CRUDE PRODUCTION *3,668,230 bbl. daily average—up 32,089 bbl. One year ago 3,768,625 bbl.*

CRUDE STOCKS *261,511,000 bbl. as of October 12 — down 1,040,000 bbl. One year ago 229,870,000 bbl.*

GASOLINE STOCKS *81,656,000 bbl. as of October 19 — down 271,000 bbl. One year ago 72,418,000 bbl.*

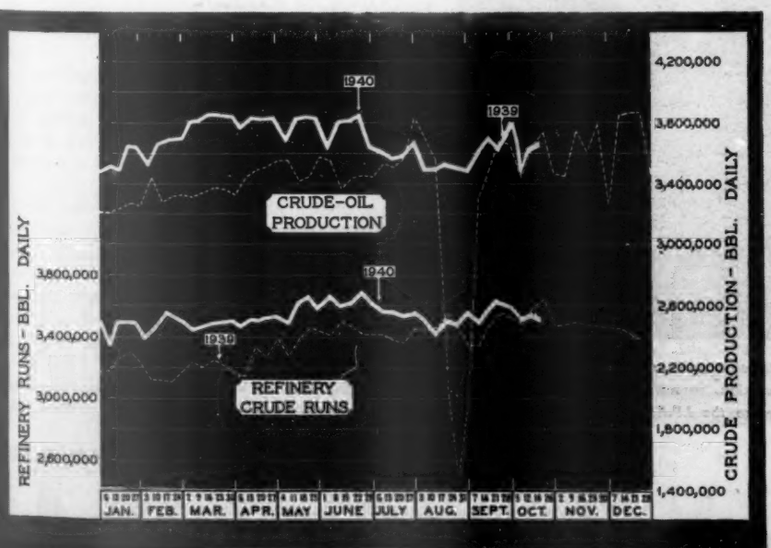
RESIDUAL FUEL-OIL STOCKS *108,141,000 bbl. as of October 19 — down 308,000 bbl. One year ago 114,052,000 bbl.*

GAS OIL AND DISTILLATES *49,051,000 bbl. as of October 19—up 308,000 bbl. One year ago 39,337,000 bbl.*

REFINERY RUNS *3,525,000 bbl. daily week ended October 19 — down 30,000 bbl. One year ago 3,580,000 bbl.*

DAILY AVERAGE PRODUCTION FOR WEEK

	Oct. 19, 1940	Bur. Mines Oct. est. of demand	October state allowables	Oct. 12, 1940
Arkansas	69,715	70,700	68,743	71,410
California	622,250	583,200	571,000	625,250
Eastern states	106,400	95,700	.....	106,200
Illinois	349,751	405,200	.....	351,653
Kansas	195,100	178,700	188,450	197,100
Louisiana	284,610	274,200	269,631	284,445
North Louisiana	*66,410*	.....	.....	*65,895*
Louisiana Gulf Coast	*218,200*	.....	.....	*218,550*
Michigan	47,214	53,900	.....	47,781
Mississippi	14,290	9,000	.....	16,057
Nebraska	2,200	.....	.....	.....
New Mexico	99,600	104,500	104,500	99,500
Oklahoma	398,750	403,500	390,000	385,775
Rocky Mountain states	102,700	96,800	.....	102,670
Texas	1,375,650	1,305,200	1,415,200	1,348,300
East Texas	*374,900*	.....	.....	*374,950*
West Texas	*239,400*	.....	.....	*231,100*
North Central Texas	*142,450*	.....	.....	*140,550*
East Central Texas	*77,850*	.....	.....	*74,550*
Texas Panhandle	*80,500*	.....	.....	*81,150*
Gulf Coast Texas	*348,600*	.....	.....	*338,450*
Southwest Texas	*111,950*	.....	.....	*107,550*
United States	3,668,230	3,580,600	.....	3,636,141


REFINERY RUNS – BBL. DAILY
CRUDE PRODUCTION – BBL. DAILY
CRUDE-OIL PRODUCTION
REFINERY CRUDE RUNS
1940
1939
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

All Phases of Industry Ready For Parts in Defense Plans

By H. STANLEY NORMAN

● This review of the petroleum industry's qualifications to meet whatever defense demand may arise reveals that all branches are equipped to fuel the program.

● Existing crude-oil reserves could produce almost 50 per cent more oil daily than at present. Additional drilling in only partly exploited fields would make possible an even greater increment over current production.

● Twenty-five per cent of the nation's refining capacity of 4,500,000 bbl. daily is not in regular service and is, therefore, available for emergency use.

● The industry operates 120,000 miles of trunk crude-oil lines, 8,000 miles of gasoline and product lines and 188,000 miles of natural-gas lines. In addition, the distribution facilities include nearly 450 tankers, several thousand barges and bulk plants along every cardinal transportation system in the country.

THE indecision of bureaucratic Washington has the petroleum industry uncertain as to just how to proceed in the defense program.

Reaffirmation of the industry's ability to meet whatever requirements it may be called upon to fill was given last week in Dallas, Tex., by Dr. Robert E. Wilson, petroleum adviser to the National Defense Commission and president of the Pan American Petroleum & Transport Co. Dr. Wilson addressed the Independent Petroleum Association of America, replacing Wesley E. Disney, Congressman from Tulsa, who was unable to leave Washington because of illness.

Remarks of Dr. Wilson were confined to a general analysis of petroleum requirements in the defense program and ability of the industry to meet this demand. There is no doubt, he said, that increasing civil consumption can be supplied regardless of the defense demands.

Uncertainties which prevent the petroleum industry from proceeding immediately on defense work are strictly affairs of Washington. The barriers may be cleared only when various bureaus and agencies reach a decision on when and in what quantities the services want 100-octane aviation gasoline.

The Defense Commission recommended in September that service branches procure 100-days supply of 100-octane gasoline totaling 7,500,000 bbl. and provide storage for it at strategic points. Reconstruction Finance Corp. followed the recommendation swiftly with appropriation of $50,000,000 for purchase of gasoline from the oil industry and allocated $8,000,000 for construction of underground storage facilities. A purchasing organization under R.F.C., Defense Supplies Corp., was formed. A buying board was created composed of one representative each from the Navy, Army, Defense Commission and R.F.C.

The petroleum industry made plans for prompt expansion of 100-octane producing capacity by 50 per cent.

Legal Snarls Entangle Program

Since perfection of all plans for aviation-gasoline procurement and storage the program has bogged down in legal technicalities. The service agencies are reluctant to pay the interest on the R.F.C. loan necessary to purchase gasoline and build storage. There is also hesitancy to make commitments for the fuel to propel planes which will not be available for 2 years or longer. Desire to correlate government purchases of motor fuel with delivery of military machines adds to the uncertainties. The oil industry is logically unwilling to spend approximately $20,000,000 for the construction of refining facilities and to produce materials for a non-existent market.

If the production of 100-octane gasoline in quantities necessary to operate the air force projected by 1942 is delayed until the need actually arises the expenditures for equipment will be much higher, probably $40,000,000 to $60,000,000. Furthermore, the full-strength defense gasoline requirements would be an inflated demand. Oil men feel it would be unfair to expect the industry to expand producing capacity at one stroke to meet what may be a brief demand. Stocks could be accumulated gradually with minimum inconvenience if buying orders are promptly executed.

Dr. Wilson, petroleum adviser to the National Defense Advisory Commission, reviewed defensive strength of the industry before the I.P.A.A.

Probable requirements of the defense program are reasonably well known. Dr. Wilson pointed out, however, that it is much easier to plan for aggression than for defense. The following excerpts from Dr. Wilson's address before the I.P.A.A. on October 16 give a general summary of the petroleum industry's position in defense.

"To date," he said, "the total buying of petroleum resulting from the defense program has been negligible—much less than enough to offset the loss of our exports to the Continent of Europe. The demand is on its way. Not only the growing Army and Navy demands for almost every petroleum product, but also additional industrial demands and demands from men who will have employment for the first time in many years. I estimate that by this coming spring, this increasing demand will offset our loss of exports and thereafter will increase steadily and substantially beyond any total requirements the industry has yet seen.

Points to Huge Reserves

"We ask ourselves, how is the petroleum industry prepared to meet this demand? The answer to that question is encouraging from the standpoint of national defense and our national economy as a whole. Thanks to proration, this is particularly true of the producing end of the business. During the last war, the price of crude oil had to be increased very substantially in order to encourage more wildcatting and the drilling of many new wells. While such a prospect at first blush might appear alluring to the producer in view of the present state of the market, if there is one thing we have learned both from the last war and from the hectic twenties, it is that marching up the hill involves a painful slide down on the other side."

Existence of large underground reserves was praised from a defense standpoint by Dr. Wilson. He said that reserves will relieve the need for putting an extra load on the steel industry or the labor market to drill thousands of new wells. This is not to say, Dr. Wilson pointed out, that the industry can relax its exploratory program. "In spite of the reports of alarmists in various quarters," he said, "the oil industry is still a long way from becoming a static one, coasting along to ultimate depletion.

"In refining the possibilities of immediate expansion to meet sharp increases of demand are not as great as in production, but nevertheless our civilian demand is so large that it still dwarfs every military demand except that for a few special products.

"Few, even in the industry, realize that the increase in our gasoline production is approximately tenfold since 1915. It would be possible by going to gasolineless Sundays, or resorting to other methods of reducing civilian consumption, to meet all military demands without any increase in refinery capacity, so there seems to be no justification for the government's financing new refineries as many seem to anticipate. I am sure the petroleum industry would not consider that they had

done their duty by their country and their customers if this had to happen. If we are to avoid such a contingency, we must at least keep our refineries growing fast enough to keep pace with the growth of peacetime consumption and keep the customary reserve of around 20 per cent of shutdown capacity available for necessary wartime expansion.

"Again, the refining end of the business is a long way from a static state, and as new and more efficient refining equipment is developed and installed, the old should, if possible, be held in reserve for emergencies."

The primary function of the Defense Commission is studying the requirements of the Army and Navy and comparing them with ability of a given industry to produce. Dr. Wilson said surprisingly few bottlenecks had appeared in the petroleum industry. He then recited the military advantages held by planes operating on 100-octane gasoline. This super-fuel has been developed in this country from a laboratory curiosity costing around $10 a gallon to a product available at about 20 refineries for approximately 17 cents per gallon.

Ability of the industry to produce more 100-octane gasoline than currently required will permit accumulation of stocks over the next several months of defense preparation and thus minimize the amount of new refinery construction necessary.

All recommendations to date have been that the purchase of petroleum products be made on the basis of due publicity and not on the basis of negotiated contracts, Dr. Wilson said.

•

Fifty Per Cent Rise in Production Possible

By W. V. HOWARD

ALTHOUGH in terms of years' supply of crude proven reserves stand at the highest level since the discovery of the East Texas and Oklahoma City fields, question has been raised as to the immediate availability of additional oil in case of emergency. On January 1, 1940, The Oil and Gas Journal estimated that there were reserves of 19,687,379,000 bbl. or 15.7 years' supply. Of this, 3,602,956,000 bbl. are in settled fields which could not presumably add to their production without a considerable amount of development work.

Reserves totaling 11,980,037,000 bbl. are in flush and semiflush fields and this includes large amounts in fields which were outlined but not completely drilled up. Some of this production has fallen into the settled class and some, though still in the flush and semiflush stages, cannot be counted on for much additional production. An additional 4,104,386,000 bbl. are in partially developed fields.

In California 2,438,784,000 bbl. are in fields of this class. California's present production is above 600,000 bbl. per day, or some 30,000 bbl. above the Conservation Committee's recommended production. Because of the large number of flush wells in the state, it is practically impossible to curtail production below the present level. Top allowables are approaching 150 bbl. which is far below the productive capacity of several hundred wells. It is believed that production could be increased over night at least 100,000 bbl. without any difficulty and without injury to the larger producers.

New Mexico and West Texas, with an estimated 1,422,045,000 bbl. in flush and semiflush fields, is producing a total of approximately 330,000 bbl. per day. When it is considered that several thousand wells in this region which are capable of making from 100 to 2,000 bbl. are cut to 30 bbl. or less, it can be conservatively estimated that production from the Permian basin could easily be doubled without further development or injury to the wells. Yet, development is still continuing and these estimates do not include many extensions which have been found and developed during the current year. These total at least 100,000 acres and at a conservative estimate of 8,000 bbl. to the acre add nearly 60 per cent to the flush reserves of the area.

A third area which could greatly increase production is the Gulf Coast region, extending from the Rio Grande to the Mississippi. This region, with current daily production of 445,000 bbl., has reserves in flush and semiflush and in partially developed fields of 4,413,024,000 bbl. and new fields and producing horizons are being reported from all parts of the area weekly. The area is severely prorated and could double its production.

The East Texas field constitutes a fourth region in which production could easily be greatly increased. With over 3,000,000,000 bbl. still in reserve and nearly 26,000 wells pinched in to 20 bbl. per day each for an average of 24 days in the month, it is obvious that here is a great supply of immediately available oil. Provided water was returned to the sand, it is believed that production could safely be increased for a period of a year or so to 40 bbl. per day or approximately 1,000,000,000 bbl. This would necessitate putting the wells on the pump more quickly than with the present rate of production, but the oil would be available.

Finally, in Kansas there are greatly prorated areas having over 600,000,000 bbl. reserve which now produce only about 150,000 bbl. per day. Here again, production could easily be doubled overnight.

Thus, from six areas under proration, present production could be increased by 1,625,000 bbl. per day, or very nearly 50 per cent of current daily production for the whole country. At the same time, undrilled reserves are now known which could be drilled up within a year to replace this oil or to continue production at this rate if the emergency continues. There is no bottleneck in crude-oil production.

•

Pipe-Line Facilities Ready For Any Emergency

By PAUL REED

THE pipe-line industry is particularly well qualified to serve the country in time of war. Because lines are laid underground they are less vulnerable to damage by bombing attacks and other military activity than any other means of transportation. When they are damaged, pipe lines can be readily repaired.

During the last 40 years this country has constructed the greatest network of pipe lines in the world. This consists of 120,000 miles of crude-oil lines, 8,000 miles of lines for the transportation of gasoline and other refined products, and 188,000 miles of natural-gas lines. Pipe-line systems serve most of the active areas of the country and are adequately prepared to meet increased demands for fuel to manufacture and operate military and naval equipment.

With modern equipment new pipe lines can be laid rapidly to take care of requirements of emergency conditions. This view shows bending pipe on a natural-gas pipe line near Brookville, Pa.

At a time of emergency, railroads will be needed for the transportation of troops, ammunition and supplies. Deliveries made by pipe line can relieve railroads and highways so that they will function most effectively. It will be remembered that, at the beginning of participation by the United States in the first World War, the extra burden thrown on the railroads produced bottlenecks which

(Continued on Page 26)

SPARKS . . . FROM THE NEWS

STANDARDIZATION: Simplifying the grades of gasoline needed by the federal Government in its preparedness program will make for a surer, low-cost distribution of the material.

RECOGNITION: Registration for conscription called to the minds of many petroleum workers that they are a part of a very essential industry. They have better than an even break that the local draft boards will so rule.

PEP AND POWER: Refiners and marketers might look with fear of losing gasoline gallonage when viewing the 1941 model cars if they did not know that the improved mileage claimed for the new engines will be more than equalized by the faster driving.

HOLLYWOOD INFLUENCE: Dick Powell of cinema fame heads a newly formed oil company now preparing to drill a wildcat in New Mexico. Given the Hollywood touch, it should be the most super colossal, stupendous, gorgeous, magnificent, supreme test ever drilled, with a thrill in each grain of sand turned up by the bit.

GOOD RECORD: During the past 2 years the frequency of lost-time accidents in oil refineries has been about half that of all manufacturing industries.

ACTIVITY: Busiest field in Oklahoma is the new Hewitt extension pool in Carter County, within the proverbial stone's throw of the Healdton and old Hewitt fields, scenes of riproaring booms of more than 20 years ago.

CHANGING YARDSTICK: Low-gravity crude, the ugly duckling of the oil business in earlier years, is getting more pampered treatment of late. Some of them have high-octane gasoline fractions and all yield large cuts of fuel oils, a desirable combination.

SALES EXPENSES: According to reports compiled by the S.E.C. covering the 1939 operations of the 19 largest integrated oil companies, 54.4 per cent of the gross income went as sales expense and 36 per cent on operations. After paying for everything else, there wasn't much left for profit.

ENCOURAGING: Gasoline consumption and attendance at the New York automobile show usually exhibit a close correlation from year to year. It is encouraging that this year's show attendance exceeded expectations and was running about 10 per cent ahead of last year when the close came.

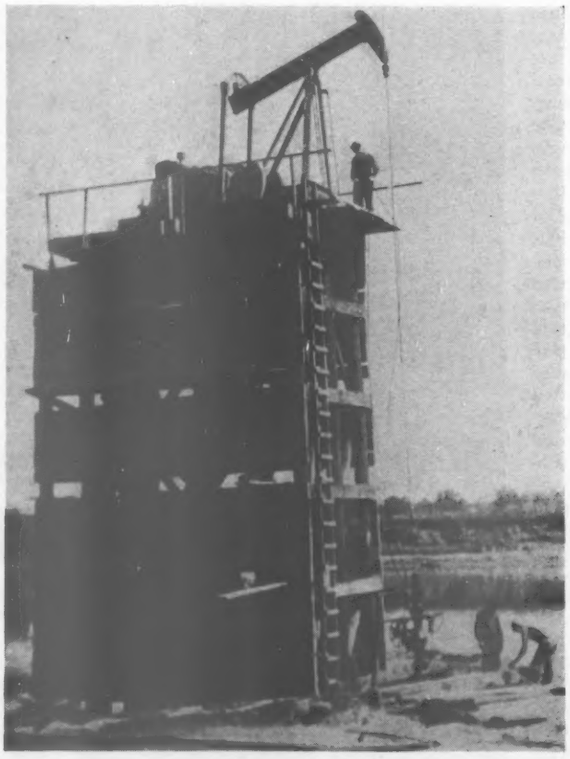
NATURAL PRORATION: As Texas' allowable production continues to increase, the percentage of allocations underproduced likewise increases due to many wells being unable to make higher quotas over an extended period. Maybe proration in some Texas fields is not as stringent as some operators claim.

SPOTLIGHT: Kansas, not content to yield the stage to the new Nebraska fields, came up with a pool opener and a couple of extension producers last week to give the boys something to talk about.

ARTICULATE: For once the oil industry is not modest in proclaiming its virtues. It is letting the world, and Washington in particular, know that its house is in order, so far as national defense is concerned. Several speakers at oil conventions during the past week have made the industry's preparedness their theme song.

INGRATITUDE: The jubilation that one might expect the independents to show over the latest efforts of the Department of Justice to help them is strangely lacking. Possibly they are too busy recovering from the blows inflicted by the excess-profits tax bill to notice.

HIGH BUT NOT DRY . . .



Spring floods of the Wabash River inundate the oil fields adjacent to it. The picture shows the arrangement used by one operator to protect his well, located on a sand bar, so production can be continued during high water

Persian Gulf Oil Properties Are Objects Of Italian Bomb Raid

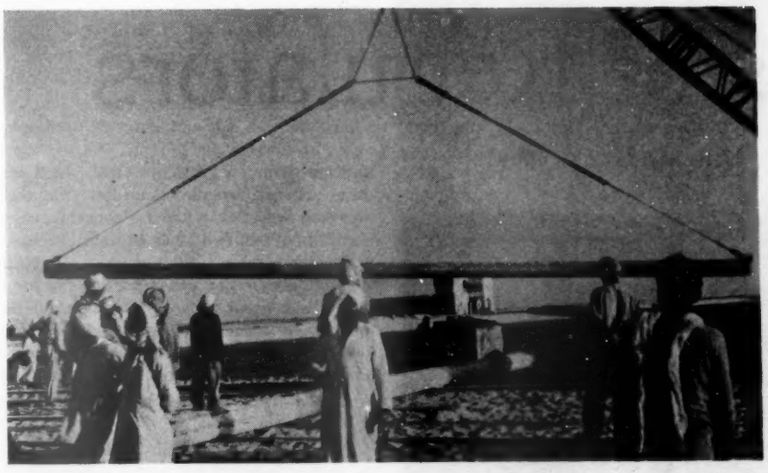
By J. P. O'DONNELL

European war activity of the week focused on the Persian Gulf where properties of American companies were bombed by Italian planes. Wells, a refinery and storage facilities on little Bahrein Island were in the line of fire as were petroleum fields located on the Arabian mainland.

NEW YORK, Oct. 22.—Bombing of Bahrein Island and Saudi Arabia October 19 brought the European war completely within the sphere of United States oil interests in foreign countries. Rome communiques claimed that Italian war planes inflicted extensive damage on the island and on the Arabian mainland where two American oil companies have developed valuable holdings.

Formal representations to Italy were under consideration by the State Department after James A. Moffett, chairman of Bahrein Petroleum Co., Ltd., registered a protest over the attack with Sumner Wells, under secretary of state.

Bahrein Petroleum Co. has more than 70 producing oil wells on the island in the Persian Gulf and the refinery there has a capacity of 32,500 bbl. daily. Bahrein production averages 20,000 bbl. daily. California Arabian Standard Oil Co., which like Bahrein Petroleum Co., is jointly held by the Texas Corp. and Standard Oil Co. of California, has concessions covering about 10,000,000 acres in the eastern part of Arabia and has developed considerable production. The Damman field has approximately 15 wells and production averages 15,000 bbl. daily.



Laying pipe at Ras Tanura, eastern Saudi Arabia

Saudi Arabia and Bahrein Island have independent governments but both countries are under close supervision, if not actual possessive direction, of the British foreign office.

Uncertainty still exists over the progress of negotiations between Japan and the Netherlands East Indies concerning delivery by the latter of 14,000,000 bbl. of oil over the next 6 months. Reports which still lack official confirmation are that an amicable agreement has been reached by Japan in its negotiations with the Batavia government and with officials of private companies owning the oil properties in the Netherlands East Indies. Royal Dutch-Shell and Standard-Vacuum Oil Co. subsidiaries own approximately 60 and 40 per cent, respectively, of Netherlands East Indies oil.

Since Japan has a comparatively small refining capacity, the bulk of her imports from the Indies would necessarily be refined products. Of the islands' total refining capacity of 180,000 bbl., 135,000 bbl. is controlled by Royal Dutch-Shell so that British capital would be in the ironical position of assisting a hostile power, a situation similar to that which prevailed in Rumania when the government took over control of the oil industry there. However, there is no alternative, for in both instances the companies are subject to the dictates of the local government.

If the Netherlands East Indies undertakes to supply Japan with 14,000,000 bbl. of oil per year it will make a substantial change in their trade relations with other countries. Last year Japan took only 4 per cent of the Netherlands East Indies oil exports whereas the amount reported in the agreement would represent 30 per cent of the total the islands exported in 1939. Actually Japan took only 1,982,000 bbl. of the islands' total exports of 48,325,000 bbl. last year, about 8 per cent of her domestic requirements. The 14,000,000 bbl. would be equivalent to 55 per cent of normal Japanese requirements which were estimated at 25,000,000 bbl. last year.

Destination Not Revealed

The ultimate destination of a large part of the Netherlands East Indies petroleum exports are not revealed in available statistics since it is sent to other ports for transshipment. However the bulk of it goes to Asiatic countries, Australia and some to Africa. Under the new setup, these countries face some degree of curtailment with the alternative of seeking a new source of supply. It is considered quite possible that South American or near-eastern countries, whose markets have been curtailed by the war in Europe and which are in position to supply the new demand, will benefit accordingly.

While the gravity of the far-eastern situation has apparently been lessened, that of the near-eastern oil countries which are watching German moves in southeastern Europe is unchanged. The presence of Russian troops in southeastern Bessarabia at the edge of the Danube delta and the Tass statement that the Soviet Government had not been informed in advance of Germany's movements in Rumania are taken to indicate that Russia has yet to approve of Germany's indicated drive to the east. Until Russia's position is clarified, the Near East situation will be unsettled.

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War's Impact on U.S. Oil Exports

EUROPE has always been the major consumer of petroleum products produced in the United States. In August 1939, the last month before the war, European countries west of Russia took 47 per cent of our exports of crude oil, gasoline, kerosene, and fuel oil. In August 1940, the last month of the first year of the war, these countries took only 10 per cent of our exports of these products.

In August 1939 the United States oil industry supplied 22 European countries and Gibraltar with some part of their oil requirements. In August of this year only eight of these countries were still taking oil from the United States and the quantities dropped from 8,260,739 bbl. of crude oil, gasoline, kerosene, fuel oil, and lubricating oil in August last year to 1,255,906 bbl. of the same products this year.

A summary of our shipments to European countries west of Russia in these 2 months follows:

Product—	1939	1940
Crude oil	2,001,742	84,230
Gasoline:		
Natural	52,121	6,484
Aviation	127,876	61,862
Other	2,524,168	250,141
Kerosene	364,249	62,593
Gas oil and distillate	1,827,773	500,058
Residual fuel oil	522,924	0
Lube oils	829,886	290,538
Total	8,260,739	1,255,906

Ralph T. Zook of Bradford, Pa., president of Sloan & Zook Co. and vice president of I.P.A.A., left, and Marrs McLean of San Antonio, Tex., a director of the association

Paul G. Blazer, Ashland, Ky., president of Ashland Oil & Refining Co., left, and R. J. O'Brien of Shreveport, La.

Independent Association Flays Malpractices of Regulators

By H. STANLEY NORMAN

DALLAS, Tex., Oct. 22.—The petroleum industry can look forward to less troublesome days, if there is any potency in the policies defined by the Independent Petroleum Association of America. This was the consensus of oil men who attended the eleventh annual meeting of the association here October 16, 17, and 18.

Probably the strongest set of declarations ever laid on the table by an oil-trade association evolved from the meeting. The Texas Railroad Commission received especially severe castigation in a condemnation of abuses in the administration of existing conservation laws "as apparently condoned" by the regulatory body.

The period intervening between now and the next Texas state-wide proration hearing November 18 and subsequent acts of the commission will reveal how seriously the regulatory body takes the multibarbed resolutions of the Independent association.

Strong opposition was reaffirmed to the enactment of any measure which would place the control of the petroleum industry or the regulation of its activities in the hands of any federal government agency. There was a minimum of reference in the formal program to the recently filed antitrust action but it was widely discussed in the hotel corridors. The oil industry, as represented by a large majority of those attending the Independent meeting, is mad about the antitrust suit.

Resolutions Urge Import Limitations

The I.P.A.A. annual-meeting resolutions urge limitation of all petroleum imports to an amount not more than 4.5 per cent of the total domestic demand and expansion of membership in and activities of the Interstate Oil Compact Commission. Several other resolutions dealt with confinement of government petroleum-product purchases to domestically produced materials.

Crude-oil production of not more than 3,470,000 bbl. daily for the final quarter of this year was proposed by the association's committee on balancing supply with demand. In reporting for the committee, Harold B. Fell, executive vice president and chairman of the supply group, said a reduction of 30,000 bbl. in the output east of California below the last previous recommendation in August was made necessary by excesses in September.

Winston P. Henry, left, of Houston, Tex., president of the Putnam Oil Co. and chairman of the subcommittee on study of T.N.E.C. hearings, conversing with E. R. Turner, Houston, vice president of Pan American Producing Co. and Pan American Pipe Line Co.

The Texas commission was singled out as recipient of the association's ire after much deliberation. The committee of 29 which was fused into the resolutions committee for the annual meeting wrestled with the conservation problem for 2 days before it was brought before the general membership. Whether to restrict the criticism solely to the Texas commission or to make it more general provoked 2 hours of debate. It may be ironical that Texas independent producers were the most insistent that the Railroad Commission receive individual citation.

Abuses listed in the resolution's condemnation follow:

1. The arbitrary action of any regulatory body in fixing state allowables in disregard of conclusive evidence establishing bona fide consumer demand for oil thereby basing the allowables on whim and caprice rather than upon facts.

2. The practice of some purchasers of making excessive and fictitious nominations in fields where such purchasers have substantial production, this practice being known as "selective buying."

3. The alarming increase in selective buying which is being accelerated by the granting of special allowables to preferred fields which necessarily causes discrimination in the allocation of consumer demand.

4. The practice of granting special allowables to certain fields to meet alleged special export demand and to fill the still capacity of certain refineries.

5. The granting of special allowables in any field without a public hearing after notice and without giving due regard to the effect of the allowable sought upon the overall distribution of the allowables of the whole state.

6. The practice of granting special allowables to certain fields based upon superficial and unsubstantial demand for oil of a particular quality.

7. The apparent disregard of the obligation to distribute the state allowable in an equitable manner and the increasing instances where favoritism

is shown producers in one locality without any justification in fact.

8. The surrender of any regulatory body of the responsibility of equitably distributing allowable production among oil fields by permitting purchasers to concentrate their purchases in fields where their production predominates.

In a five-point program directed chiefly at national welfare of the petroleum industry, the association urged limitation of imports to 4.5 per cent of the domestic demand; equitable distribution of the national demand between producing states; correction by Congress of inequities in tax laws; discontinuance of excessive drilling and authorization for voluntary agreements within the industry, subject to the approval of a proper federal agency.

The association approved the maintenance of the petroleum section in the Bureau of Mines in its present position, unrelated to any administrative or policy-forming agency of the Government which might decrease the confidence which the industry feels in the impartial and accurate character of statistical information.

Ask Permanent Hot Oil Legislation

Conversion of the Connally "hot" oil act from temporary to permanent legislation by Congress was asked. Rejection of the Cole bill was urged on the ground that there is apparent no reason why a system of government control of the industry should be substituted for the effective play of private enterprise which is already subject to state regulation in the interest of conservation.

Unpredictable amounts of petroleum imports were declared to be invading the domestic market and to be handicapping conservation programs. In this special resolution aimed at the Venezuelan trade agreement the association called upon Congress for legislation which will exclude from importation any foreign-produced petroleum which has been confiscated by any foreign government without satisfactory payment. The petroleum industry is prepared to give the fullest service for peaceful uses or defense activities without regimentation or superimposed authority, the association declared. Accomplishments of the industry in development of record-high reserves were recited along with increased efficiency in distribution and steady improvement in quality of products at the lowest economic price.

Extension of the Interstate Oil Compact authority in signatory states was urged along with a request that nonmember states join in the program.

Recommendation was made in a special report by an association subcommittee, headed by Joe S. Bridwell, of Wichita Falls, that the Interstate Oil Compact Commission should suggest the quantity of oil each state should produce.

After reviewing progress of the Compact Commission Mr. Bridwell's committee criticized members for failing to function as fully as possible under the provisions of the law in the prevention of physical waste.

"We feel," said the committee in its report, "that under the powers of the present compact, it is the duty and responsibility of this commission to make a continuous study of conservation laws, rules, regulations, and practices to the end that all facts pertaining to the prevention of waste and the accomplishment of true conservation may be made available at all times to the oil-producing states and the industry as a whole."

The committee urged organization and financing of a body within the compact to make a full and complete review of all the elements essential to the conservation program. Tribute was paid to the Bureau of Mines estimates of overall consumer demand but the committee added that the Compact Commission should supplement this guide by its own recommendations to the oil-producing states the quantity of oil each should produce. Continuous study of the Compact Commission and its functions was recommended.

In recommending that national crude-oil production be reduced to 3,470,000 bbl. daily during the final quarter, the committee on balancing supply with demand pointed out that little progress was made in liquidating gasoline stocks in September. The area east of California produced approximately 120,000 bbl. daily in September above the supply committee's recommendations made August 23 at the Oklahoma City meeting of the Interstate Oil Compact Commission.

Joe S. Bridwell of Wichita Falls, Tex., an I.P.A.A. director, and Warwick M. Downing of Denver, Colo., chairman of the committee on credentials, rules and order of business

Urge Curtailed Production

Final-quarter production necessary in order to balance supply with demand and provide for a reduction in gasoline stocks to the economic level of 70,000,000 bbl. on December 31 was set out by the committee as follows:

	Bbl. daily
East of California	2,900,000
California	570,000
Total United States	3,470,000

There is urgent need for curtailment and not expansion in the rate of crude-oil production, in the opinion of the committee. Warning was sounded that indications point to higher crude output and that preventive steps should be taken. The annual meeting provided a forum for discussion of numerous other questions of interest to the industry in addition to the formation of policies and programs for the ensuing year.

Among highlights of the meeting were the addresses by Frank Buttram, of Oklahoma City, Okla., who was reelected president of the association, and Robert E. Wilson, petroleum adviser to the National Defense Commission. Mr. Buttram's presidential address is reproduced elsewhere in this issue and Dr. Wilson's remarks form the nucleus for a part of the review on the industry's position in the defense program, also in this edition.

Expansion of the public-relations program was suggested by Burdette Blue, Bartlesville, Okla., president of Indian Territory Illuminating Oil Co. and retiring chairman of the committee on this function. He pressed for full utility of the speakers' bureau in spreading information on contributions made by the industry. Lawrence E. Smith, Tulsa, director of the public-relations division, spoke on "The Oil Industry as News" and cited specific methods of disseminating constructive data.

Improvements in Exploration

Belief that there is an abundance of petroleum yet to be discovered in terms of national demand was voiced by A. I. Levorsen, Tulsa, consulting geologist. His conviction is based largely on the increased knowledge of sedimentation. The science

(Continued on Page 26)

Left to right: C. A. Johnson of Los Angeles, Calif., A. R. Thompson of Mattoon, Ill., and D. R. Lauck of Wichita, Kans., who were selected as representative of the independents in their respective states at one of the I.P.A.A. luncheon conferences

Buttram Decries Compulsion of Choosing Control or Court Attacks

Frank Buttram delivering his presidential address before the Independent Petroleum Association of America, in Dallas, October 17

"The president's address," declared C. A. Lester, general chairman of the I.P.A.A. meeting in Dallas, Tex., October 16, 17 and 18, "should be compulsory reading for every congressman, every legislator, every state official, every member of petroleum regulatory bodies and every oil man in the country." Among highlights of the address were these:

1. The oil industry should not be forced to choose between surrender of its property to federal control or lose its properties through the drastic penalties of a selected court.

2. If agreements within the industry, subject to the approval of some designated federal agency, could be obtained we could serve the nation much better in the future than we can at the present.

3. We are strongly opposed to special allowables and other inequitable practices in the administration of conservation laws.

By FRANK BUTTRAM
President, Independent Petroleum Association of America

IN a world gone mad on the road to destruction we gather here to plan a constructive program for the future. While giving all due and proper consideration to those problems of national defense upon which much of the activities of the nation must be centered, we are here to plan for a larger service, more widely distributed prosperity, greater peace and security. While millions are fighting for the establishment of totalitarian authority in other lands, we gather here to discuss the development of independence, the encouragement of free enterprise, and the maintenance of competitive activity.

Industry's Record Unparalleled

There should be no need today of the Government exercising control over an industry which without public aid or subsidy has made outstanding contributions to the national wealth, which sells its products in terms of pennies and which is built upon service, a business which represents the investment of billions of dollars and the employment of millions of people. No government control of any industry anywhere in the world can show a similar record.

The petroleum industry is operated by men. They may be able men. They may be men of high integrity. Nevertheless, they are men. They make mistakes. Too often we see the mistake and do not see the achievement. We count the spots on the sun and forget that we owe our very lives to that same sun in spite of its spots. We see the flaws in our industry. We observe the shortsightedness of many, the jealousness and selfishness of some, the dictatorial manner of others, the oppression of size, the weaknesses of the small man, the sad play of politics. We see all this and much more. If this were a true picture of our industry, then we had best go to the Great White Father in Washington and ask him to let us be wards of the Government like the Indians on the reservations.

That is not our industry. The contributions we have made to human welfare, to human happiness, to human progress, are beyond all calculation. The history of the last quarter century would not only be different; it would be greatly poorer, if the use of petroleum products had been either unknown or confined to a few. We have not only made them known; we have made them accessible to the poorest. In this the independents in the industry have been among the leaders.

Constructive Regulation Approved

This association has in the past repeatedly approved various forms of governmental cooperation. It has even approved some forms of government regulation. There have even been times when it gave thoughtful and serious consideration to the idea of governmental control. Members of this organization have proposed, have supported, and have observed state laws for the regulation of production, for proration, for ratable taking. It has repeatedly urged upon official regulatory bodies and upon the Interstate Oil Compact Commission the importance of balancing supply with demand in order to avoid waste. It conceived, proposed and urged the adoption of the Connally Hot Oil Act. It presented to Congress the importance of and the necessity for the establishment of proper excise taxes upon petroleum imports.

We desired all these in order that the tendencies toward monopoly might be checked and that the smaller units in the industry might be enabled to compete on fair terms with the great integrated companies. Many of us present owe our business existence to our successful efforts in behalf of legislation of this character.

We are faced today with a question of the highest importance. Having taken these steps by which we have invited governmental cooperation for the benefit of the industry, what other steps if any shall we take? The taste for power grows by what it feeds upon. When we say Government we must not forget that Government is administered by men. Each bureaucrat, however petty his place, who has once tasted the sweets of his authority hungers for more. It is not merely the kings and emperors of the world, the Fuehrers and the Duces in distant Europe who seek to reach out beyond their borders and bring within the sway and scope of their powers new territory at whatever cost to those enslaved. The petty official "clad in a little brief authority" has within his own diminished sphere the same lusts and the same craving. He too would "grasp this sorry scheme of things entire" in order that he might "remold it closer to the heart's desire." Like Hitler, like Stalin, like Mussolini, he believes he can do better for his Poland, his Czechoslovakia, his Norway, his Ethiopia, than can those who are the rightful possessors of those realms.

World Transformed by Oil

Thus we have from time to time proposals made by a benevolent Government, well-meaning

in its purposes, to take over the control of an industry which, within the span of one man's life, has transformed the world, made accessible the depths of the sea, and turned the winds into a highway for man's traffic. To control an industry of such magnitude would be to accomplish a dream greater than Alexander ever had. Perhaps that would be the best thing after all. At least there are those who believe it. Weary with ceaseless argument, tired with the task of attempting to reconcile the necessity of conservative operation, to protect our reserves and extend their life, with the new economic theories of some who insist that the consumer's interests stand foremost, even though through cut-throat competition we destroy irreplaceable resources which should serve for generations, some are willing to throw the burden upon some politicians or public officials.

There are others who, having found some degree of governmental regulation is good, think that more governmental regulation would be better. There are still others harassed by threats and penalties, irritated and confused by conflicting governmental theories and policies, taxed to the limit and beyond it, plagued by labor troubles, victims of those over producing in new fields or in new states, compelled to sell their products at prices established without their voice or consent, who are willing to pay an excessive price for peace in the bosom of the Government.

Stripper Economics Important

We might draft a new declaration of independence here but to whom should we present it? We might recite our wrongs and declare our rights, but with whom should we fight to end the one and win the other? Possibly the most vital question we will face during our deliberations here will be this basic problem as to whether it is better for us to "bear those ills we have or to fly to others we know not of." On the other hand, we might make an act of faith and accept the promises of a government messiah that he will lead us into a Promised Land, flowing with milk and honey, if we but give our all into his keeping.

It all seems as simple as Hamlet's problem: To be or not to be. It is also as complex. Involved in this issue is the future of the greater part of our known oil reserves. The stripper wells cannot continue production if their oil must be sold below the cost of that production. But that involves a certain degree of stabilization. If the industry, obedient to the orders of properly qualified state regulatory bodies, holds supply within a reasonable distance of demand it may be accused of price fixing. Any attempt at insuring cost recovery, whether it be the attempt of a little group of service-station operators resolving that they will not cut their own throat in a useless price war but will return to proper-posted prices, or whether it be the action of an official agency of a sovereign state in shutting down production to meet a situation inevitably bound to encourage waste, there falls upon these the severe displeasure of governmental authority. The consumer must have his petroleum products at the lowest possible price regardless of what it may do to one of the most important industries in the nation.

Here then is the issue: To produce all the oil possible regardless of price or demand, regardless of waste and losses underground, regardless of sound engineering practices, and then in the competitive battle for the consumer's pennies to cut price and then cut price again until the small producer is driven from the field as uneconomic and the operators of the stripper wells—that great back log upon which we should be able to rely for decades, are forced to abandon these priceless reserves to the invasion of salt water while their corroding pipes lose even the value of junk.

Expropriation Threatened

We are impaled upon the horns of a dilemma. If we wastefully over produce then we are threatened with expropriation under the euphonious name of federal control. If we attempt to maintain a balance which will permit these wells of settled production to continue to operate economically, then the strong arm of federal power will hale us into court.

We should not be obliged to choose between surrender of our property to federal control or loss of our properties through the drastic penalties of a selected court. There must be another way out. Part of our task at this gathering should be the discovery of that way.

The industry will need all its constructive ability, all its best judgment and all its sound thinking within the next few years. We will be beset by visionaries and theorists. Those who are hostile to our industrial order will seek to utilize the enthusiasms born of a national-defense program. In the name of patriotism they may propose revolutionary programs. We must be alert to meet these proposals as they arise.

Approved Agreements Sought

One of the points in the program of activity which this association has been maintaining has been the authorization of voluntary agreements within the industry, subject to the approval of some designated federal agency. If this could be obtained we could serve the nation much better in the future than we can at the present. The deadening hand of fear of prosecution for technical violation of a statute whose interpretation has repeatedly been questioned would no longer hold back the development of sound programs to the advantage of the general welfare and to the direct advantage of every consumer of our product.

We have long supported the program for the conservation of our natural petroleum resources and the principle that a balance of supply with demand is essential to any conservation program. We have endeavored to recommend minimum standards of sound conservation and equitable proration, and through the reports of our committee on balance of supply and demand to assist the Interstate Oil Compact Commission and the regulatory bodies of the oil-producing states in bringing about sound conservation and a balance of supply with demand together with proration. We are strongly opposed to special allowables and other inequitable practices in the administration of conservation laws. There has been a distinct failure this year in balance of supply with demand. Stocks of crude oil and gasoline have increased unnecessarily as a result of production in excess of consumptive demand, excessive runs to stills, and failure to properly adjust refinery yields.

The regulatory bodies have permitted allowable production in excess of consumptive demand but the blame for this act on their part cannot be placed entirely on them. Most of the purchasing companies have made nominations far in excess of consumptive demand requirements and by so doing have placed the regulatory bodies in a most embarrassing position.

Supply Balance Important

One of the most important questions confronting this meeting is how we can make the conservation program effective for equitable proration and balance supply with demand. Can we and shall we do it through additional regulation? If so, shall it be done through strengthening the Interstate Oil Compact Commission? Shall it be done through direct federal legislation? Or shall it be done through cooperation between the oil-producing states and the federal Government? Or, is it desired that we accept the weakness and failure of the present system, being willing to bear the burden thereof, rather than to seek further regulation of any kind?

I have left to the last one of the most serious questions affecting the industry. When we were organized at Colorado Springs, the import problem was the greatest one we faced. That problem is still with us. It is still one of the gravest questions awaiting our solution. Its importance today is greater than it has been for the major portion of our life as an association. It threatens to become even greater. We must meet that threat. The manner in which we may meet it and the possible steps we must take may furnish one of the most essential subjects for our discussion at this meeting.

The protests which have been filed by the association with the committee on reciprocity information against the existing situation in regard to imports have been supplemented by the very fine cooperation of many of our members, who wrote to the secretary of state giving valuable and pertinent information concerning the damage done to our markets by this invasion of foreign oil. This action taken by so many without solicitation should be very helpful to our movement for the correction of the State Department's position on the excise taxes. A similar degree of cooperation was also observed when Congress was drafting the Second Revenue Act of 1940. Here too, many of our members supplied valuable information and suggestions which aided in securing recognition of unusual positions of independents in the petroleum industry.

Impressed by Cooperation

I mention these two instances as illustrating something which has impressed me during my year of office as your president. We are an association. That means that we associate with each other. It means that we are all working for the common good. We do not leave to some officers of the association the task of carrying the whole burden. Instead we are uniting our forces, each making his own contribution of thought and influence and time. That was one of the first purposes in forming this association: to provide a forum where men could get together, think through their problems, and express their ideas in regard to conditions within the industry. Besides being a forum, the association must provide a medium through which, having thought through our problems and expressed ourselves upon them, we might engage in common action for the common good. While I had always known that this was a primary object in our association, I never fully realized it until I took my present office. I find this spirit of willingness to serve characterizes so many.

Our general counsel and our executive vice president will each present to you a detailed picture of our work. I need not tell you how much we owe these men who are devoting themselves to the welfare of the independents and the industry. We are fortunate that we have been able to find men of their caliber who are willing to lay aside all other activities and devote themselves so entirely to our work. Leaving to these the story of their services, I have been trying to give you the background, the atmosphere, the broad general principles, which have been outstanding during this year of strenuous activities and of genuine achievement. The record we have made in these 12 months is in worthy succession to the years which preceded it and made it possible.

STATE CAPITALS...

OKLAHOMA

OKLAHOMA'S STATE-WIDE HEARING for receiving evidence relative to the fixing of the November state allowable has been set by the Corporation Commission for October 30. The hearing is called for 10 a.m., after which a recommendation will be made to the commission at its formal hearing at 11 a.m. The Bureau of Mines has forecast a market demand of 413,000 bbl. for Oklahoma crude oil during November, or 9,500 bbl. more than its October forecast and 16,000 bbl. more than the September recommendation of 397,000 bbl. During these 2 months, as well as in August, the state's allowable production has been maintained at the 390,000-bbl. level so that Oklahoma's current allowable is 23,000 bbl. under the estimated market demand for November.

LOUISIANA

A SYSTEM OF STATE-WIDE TENDERS on oil produced in Louisiana is being drawn up for possible adoption by November 1. The system will be similar to those in effect in Texas and Arkansas, and will require tenders for production, movement and storage of oil, providing a record of crude from the time it is produced until it is refined. Tenders have been required on barge movements of oil in coastal Louisiana since October 1.

TEXAS

AT AN ALLOWABLE HEARING held in Austin on Tuesday, Humble Oil & Refining Co. asked allowables in the Anahuac, Thompson, Hastings, and Webster fields be increased 38,976 bbl. to a total of 67,500 bbl. daily, presenting testimony to show that a market demand existed for the oil and that it could be produced without waste.

Humble, represented by Hines Baker, contended that gross inequity exists by which these four fields are being denied their fair share of the total state production, while Ira Butler, representing operators in West Texas fields, contended that to grant more oil in the four fields would cause reductions of Humble takings in West Texas and create still greater inequities.

Mr. Baker said, also, Humble is not abandoning its opposition to selective buying and denied that it was discriminating against West Texas. On the contrary, he said, it has extended its pipe lines in West Texas and has put 500,000 bbl. of West Texas oil into storage.

THE RAILROAD COMMISSION last week announced that the next state-wide proration hearing will be held on November 18, thus apparently there will be no adjustment in the Texas allowable production as has been requested by numerous operators and trade associations. Since mid-September when it became apparent that the commission had adopted a policy of giving higher allowables to any field where evidence was given that the oil could be produced and a market demand existed for the increase, some operators have been asking for a state-wide hearing. In recent weeks members of the commission have declined to discuss the holding of a state-wide hearing for purposes of making adjustments to the current 3-month order, but their setting of a hearing some 30 days in advance is being interpreted as a definite "No."

Meanwhile, the state's daily allowable production continues to rise as the commission exempts additional fields from the shutdowns or grants allowable increases. During the past week the allowable rose 7,147 bbl. to 1,415,243 bbl. on October 19, the Oil and Gas Division reported. The gain shoved the permitted flow to 110,043 bbl. above the Bureau of Mines recommendation, but with underproduction of allowables of about 3 per cent the overage would be reduced to 67,586 bbl. daily.

Every proration district, except East Texas, which remained steady at an average of 372,925 bbl., registered gains during the week. An increase of 2,646 bbl., boosting the Gulf Coast district to 229,765 bbl., was the largest. The daily average for other districts includes Southwest Texas, 237,037, up 1,325; East Central, 80,101, up 352; West Central, 54,781, up 168; West Texas, 221,929, up 434; North Texas, 132,143, up 2,088, and Panhandle, 86,562, up 134.

THE TEXAS ATTORNEY GENERAL's department has completed its brief for the appeal of Humble Oil & Refining Co.'s suit attacking the method of proration in the East Texas field now awaiting submission to the United States Supreme Court. Backbone of the state's brief is that methods of proration based upon the known oil reserves in that field would actually cause many wells to lose a great proportion of their recoverable oil. Humble has contended that the field should be prorated on an oil-in-place basis and claimed 14 per cent of the reserves underlies its properties but that it was allowed to produce only about 11 per cent.

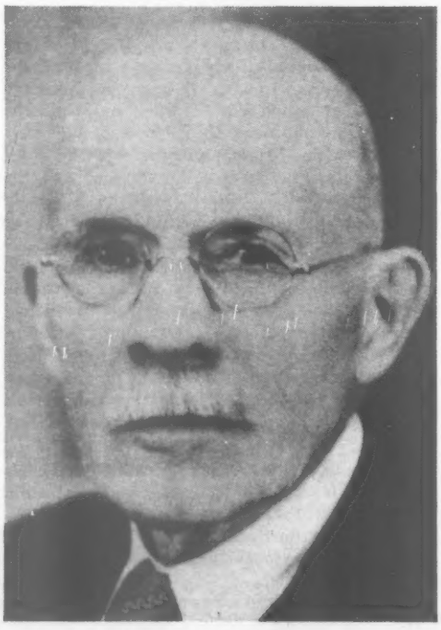
Asst. Atty. Gen. James P. Hart, who stated the case will likely be submitted to the Supreme Court during the week of November 12, in his brief argued the fallacies of this system are:

First, the wide margin of error possible in figuring reserves. This margin ranges up as high as 30 per cent, on the testimony of Humble's own engineers. Thus there would be a division of the oil on a basis admittedly subject to wide error.

Second, it fails to take into account the time factor in a water-drive field. The water is forced into the reservoir in ratio to the amount of fluid taken out. Edge wells are usually thin-sanded, with much less reserves than leases in the middle of the field. Therefore, if the edge wells and the middle wells both were given an amount in proportion to their reserves, the water would have drowned out the edge wells long before they had recovered oil actually in place. The fairway wells currently may produce less than their share; but they will produce their share longer, Mr. Hart argues.

The brief leans heavily on the prior opinion of the court in the Rowan & Nichols Todd-B case, in which the commission's potential-basis proration method was upheld. Under the method upheld in the Rowan & Nichols case, approximately 98 per cent of the total allowed production of the field was on a basis of per-well allocation—against which much of Humble's attack was levelled. Subsequently the proration method was modified, so that only 75 per cent, approximately, of the field's allowable is on a per well basis; thus Humble is in a better position, Mr. Hart points out, than under the proration method specifically approved by the Supreme Court.

OIL-STATE GOVERNOR . . .



GOV. LUREN D. DICKINSON

With oil occurring in reservoirs which are subject to rapid depletion, Michigan operators have been kept on the jump to prevent a shortage of oil for the state's refineries. They have recently been aided in their efforts to keep production on an even keel by proration measures which are flexible and which have been applied most effectively

KANSAS

THE STATE CORPORATION COMMISSION has announced that a state-wide hearing for taking evidence relating to market demand for Kansas crude oil during November will be held on October 29 at 2 p.m. in Wichita. At the October state-wide hearing crude-oil purchasers nominations totaled 182,568 bbl. daily, after which the commission set the state's October daily allowable production at 188,450 bbl. These figures compared with a Bureau of Mines estimated market demand of 178,700 bbl. daily. For November the bureau has estimated there will be a market demand of 186,000 bbl. daily for Kansas crude. Since the bureau has forecast a market demand of 385,000 bbl. for Illinois crude during November, 20,200 bbl. less than in October, it is regarded as likely that the commission will reduce its November allowable production little, if any, from that of October.

OTHER HEARINGS SET BY THE COMMISSION for October 29 include: A hearing on the matter of the classification of the Branine-Holl No. 1-A Warner in Section 15-20-10w, Rice County; for hearing testimony on a proposed well-spacing plan of Cities Service Oil Co. for the development of the Ray pool in Phillips, Rooks and Graham counties; for hearing testimony on a proposed spacing pattern of Cities Service for the development of a part of a pool in Sections 20, 21, 28 and 29, all in Township 23s, Range 12w, Stafford County.

CALIFORNIA

CALIFORNIA CRUDE-OIL PRODUCTION averaged 625,793 bbl. daily for the first 15 days in October and on October 16 production dropped to 619,212 bbl. daily. This indicates that the average daily crude-oil production for the month will be substantially below the average for the first 15 days. Recent developments indicate the probability that the average for the month of October will be slightly below 600,000 bbl. daily unless something develops at the last minute. Last month actual production dropped to as low as 580,000 bbl. daily on several occasions after the first half of the month had been passed. If everything runs according to schedule an additional 10,000 bbl. per day will be shut in as a curtailment measure within the next few days. A general agreement had been reached with respect to this procedure and this will almost certainly assure a reduction in state production below 600,000 bbl. daily.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Wanted: An Even Break

In a world where "smash and grab" has become the principle which governs human conduct, it is refreshing to note that at least one group of American business men insists on viewing its problems in a statesmanlike manner.

Refreshing, perhaps, but not surprising! For the group in question consists of the independent oil operators of the United States.

At the Dallas meetings of the National Stripper Well Association and of the Independent Petroleum Association of America two well-established American principles were in the minds of all, although probably expressed directly by none. One does not continually recite axioms.

These principles are that that government is best which governs least, and that in a free country there should be equal rights for all and special privileges for none.

The independent oil operators of today include many of the majors of tomorrow; or would, provided governmental restrictions and inequitable taxation did not make it impossible for them to grow. One reason for their success in holding their own is that large corporations tend to cover too much territory to become overstrong at any one point.

For the same reason, the independents feel that concentrating in a single body control of 350,000 wells in over 1,000 fields in 22 states would make an unwieldy organization. They consider that such a body would be more amenable to political pressure than to the necessity of wisely administering the nation's most valuble expendable resource.

There is in existence an Interstate Oil Compact Commission which provides the mechanism for conserving oil resources on a nation-wide basis. The independents reiterate their faith in the workability of the compact and urge that all states not now signatory to it take such measures as are necessary to join. Their recommendations should be supported.

The independents also vehemently oppose the abuses which become apparent in the administration of even the best of conservation laws when privileges are granted to individuals on specious grounds.

Refinery flexibility has greatly reduced the effect of differences between crudes. It is obvious that the establishment of a market for a certain crude which differs little from many others in the same area is merely an attempt to circumvent the principle of ratable taking. For a state regulatory body to listen to contrary reasoning without a public hearing lays it open to charges of favoritism and unfairness.

That loyal Texans should accuse their own regulatory body of such action makes either a complete explanation or an immediate change in procedure obligatory upon the commission.

Lest any person consider that this is a veiled attack upon the majors it should be pointed out that many independents dominate certain fields and are in as good position to obtain special privileges as the majors.

The independent oil operators of the United States ask for no special favor for themselves. They believe that fairly administered state proration measures will give them an even break in the competition that wages fiercely in oil production.

They believe that it is possible for each state to secure equitable treatment at the hands of a completely organized and efficiently run Interstate Oil Compact Commission. Their beliefs and their recommendations are worthy of careful and sympathetic consideration by the American people.

Rival Applicants for Milwaukee Gas Line Deny "Agreement"

MADISON, Wis., Oct. 22.—Hearings on rival applications of the Independent Natural Gas Co. and the Western Natural Gas Co. for certificates of convenience and necessity to provide Wisconsin with pipeline service entered their third week here Monday after producing denials last week that there has been any "agreement" between the two concerns.

Questioned by counsel for the Federal Power Commission, Paul Kayser, president of the Western company, insisted there had been no understanding that either company would withdraw its application or that they would unite in a single application.

"There is no such agreement and we have not been approached with any such idea," Mr. Kayser said. Prior to the hearing here before Ewing G. Simpson, F.P.C. examiner, and representatives of the Wisconsin and Kansas public service and corporation commissions, Mr. Kayser explained, there had been "some discussion between us," but they related, he said, only to the "general situation."

Mr. Kayser testified that the Wisconsin market is one of the few large industrial areas in the world not now served with natural gas, but he contended the market would support only one 802-mile 26-in. pipe line such as that which his company proposes to build from the Hugoton field in Kansas to Milwaukee, by way of Dubuque, Iowa.

Don Emery, Bartlesville, Okla., vice president of Independent Natural Gas Co. and vice president and general counsel of the Phillips Petroleum Co., of which it is a wholly owned subsidiary, appeared as the first witness on behalf of his firm's application.

Whereas Mr. Kayser has reported 50,000 acres of gas-producing land in the Hugoton field had been dedicated to the proposed Western pipe line, Mr. Emery testified his company proposes to serve this state both from the Hugoton field and the Texas Panhandle.

It would build an 822-mile pipe line from Moore County, Texas, with a 22-in. diameter, to a point south of Madison, Wis., and a 20-in. diameter the remainder of the distance to Milwaukee, he said, at an estimated cost of $32,000,000. Details of construction and estimated deliveries and rates were to be supplied by engineers and geologists following Mr. Emery on the stand.

Plan Feasible and Inevitable

Declaring the introduction of natural gas in Wisconsin not only is feasible but is inevitable, Mr. Emery testified his company has sufficient gas immediately available to supply this state's first-year requirements and gave a preliminary outline of potential supplies for the future.

The Phillips company, he said, owns 150,000 "virgin" acres in the Hugoton field and 50,000 producing acres in the Panhandle, besides controlling 54,000 additional producing acres in that area. Its 632 producing wells in the Panhandle have a daily overflow capacity of 5,000,000,000 cu. ft. and if Wisconsin's market developed a consumption of 200,000,000 cu. ft. daily it would represent only 4 per cent of the total producing capacity, Mr. Emery said. In addition, he declared, the company holds 150,000 proven but undeveloped acres in the Panhandle with an estimated capacity 12 to 13 times the Wisconsin demand.

Further, Mr. Emery said, the company is willing to divert 300,000,000 cu. ft. of gas daily production now used for carbon-black manufacture to the Wisconsin pipe line after present contracts expire. In fact, he testified, it is willing to abandon entirely the manufacture of carbon black if it can find other outlets for its production, but it does not intend to permit wastage nor drainage of its gas reserves, he explained.

Mr. Emery contended prices proposed by both applicant companies would permit delivery of natural gas to Milwaukee at 60 per cent of the cost now paid for manufactured gas. The Milwaukee Gas Light Co. manufactures gas at a cost of 17 to 19 cents per 1,000 cu. ft. on a 520 B.t.u. basis, while natural gas could be supplied at approximately 22 cents a thousand on a 1,000-B.t.u. basis, he said.

The question of the Federal Power Commission's jurisdiction over applications for natural-gas service in Wisconsin arose at several points last week, when testimony touched the relation of the Natural Gas Pipeline Co. of America, which now serves Chicago, to the Wisconsin market.

Under legal interpretations of the Natural Gas Act limiting the commission's jurisdiction to "competitive" markets, the testimony turned upon the question as to whether or not the Natural Gas Pipeline Co. now "serves" the Wisconsin market.

At the opening of the Independent Natural Gas hearing counsel for the company received permission to amend its application to state that Wisconsin is not now physically served by any natural-gas company and that the full capacity of the interstate transmission line now entering this general market is required to serve the Chicago area.

Mr. Kayser's statement that there is no agreement between the two applicants followed an unsuccessful objection by F.P.C. attorneys when counsel for Independent Natural Gas asked Mr. Kayser's opinion as to whether or not the Wisconsin market is served or could be served adequately by an existing company. Mr. Kayser said in his opinion no gas pipe line now is serving Wisconsin. He declared, however, he would be willing to withdraw his application if the Natural Gas Pipe Line Co. made actual connections with Milwaukee.

Mr. Kayser said he first came into the Wisconsin field to investigate possibilities last February or March, and admitted he was told then that other pipe-line companies had attempted to sell gas in the state 10 or more years ago. At that time, however, the chief sales resistance appeared to have arisen from the question of rates and from a feeling that the Milwaukee area would be subordinated to the larger Chicago market, he said.

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McGaha Named President of Stripper Well Association

DALLAS, Tex., Oct. 22.—Charles P. McGaha, vice president of Fain-McGaha Oil Co., Wichita Falls, Tex., was elected president of the National Stripper Well Association at its annual meeting here October 15. He succeeds Jake L. Hamon, of Dallas.

Criticism of the Texas Railroad Commission policies made before the national association by David G. Gray of Wichita Falls, executive vice president of the North Texas Oil and Gas Association, drew comment from Ernest O. Thompson, commissioner. In a statement released at Austin, Col. Thompson said Mr. Gray's attack came with ill grace.

Selective purchasing, Mr. Gray had charged was encouraged by the Railroad Commission proration policy. An account of the stripper well meeting was carried in the October 17 issue of The Oil and Gas Journal, Page 27.

CHARLES P. McGAHA

Mr. Gray, the commissioner said, was instrumental in increasing allowables recently in the Hull-Silk and K.M.A. fields in North Texas.

The commission, Col. Thompson added, has zealously guarded the interest of stripper wells.

Upon presentation of proof that a market exists and that additional oil can be produced without physical waste it has been the commission's policy to increase allowables, Col. Thompson explained.

"It is not within the power of the commission," he declared, "to make oil scarce in order to make it high. Such a policy would be contrary to good public policy, would be against the interest of the consumer and would be against our national defense."

A reduction in Texas allowables over the winter was promised by Col. Thompson who said that depressed demand always had been acknowledged in the past.

Harold B. Fell of Ardmore, was reelected executive president of the stripper well association and Howard J. Whitehill of Tulsa was renamed secretary-treasurer. New state vice presidents are Wirt Franklin, Ardmore, for Oklahoma; Guy T. Berry, Independence, for Kansas; Lee Mulvihill, Robinson, for Illinois; A. H. Ledbetter for Michigan; Harry Leonard, Roswell, for New Mexico; N. M. Shiarella for Kentucky, Ralph T. Zook for Pennsylvania and Richard Fenton for California.

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Name 17 Members to N.P.A. Defense Committee

Seventeen members of the National Petroleum Association have been appointed to compose the organization's defense committee authorized at the annual meeting in Atlantic City, N. J., in September.

Defense-committee members are: N. H. Weber, Pure Oil Co.; C. L. Suhr, the Pennzoil Co.; H. A. Logan, United Refining Co. Otto Koch, Kendall Refining Co.; Fayette B. Dow, N.P.A.; Paul G. Blazer, Ashland Oil & Refining Co.; W. H. Correa, Socony-Vacuum Oil Co., Inc.; Peter H. Curry, South Penn Refining Co.; Clarence M. Davison, Standard Oil Co. of New Jersey; C. E. Foster, Cities Service Oil Co.; B. I. Graves, Tide Water Associated Oil Co.; H. P. Hobart, Gulf Oil Corp.; W. T. Holliday, Standard Oil Co. of Ohio; L. P. Lockridge, Sinclair Refining Co.; Samuel Messer, Quaker State Oil Refining Corp.; and R. G. Sonneborn, Daugherty and Franklin Creek Refining companies.

Defense Plans Not Advancing As Rapidly As Hoped

By HENRY D. RALPH

WASHINGTON, D. C., Oct. 21.—Charges that the national-defense program has bogged down may not be justified, but there is ample justification for the statement that a great many of the plans for production and procurement of defense supplies have not advanced as rapidly as the planning officials had hoped a few months ago.

One industry expert on the staff of the National Defense Advisory Commission told this writer privately last week that a great many plans involving his end of the program are being held up because of politics and the approaching election. He said that he and his associates left their business connections to come to Washington in the belief that they could do a business-like job of mapping out and launching a program for procuring needed strategic materials, but that they are very much downhearted at the way their preliminary plans are being pigeonholed and revised for political purposes.

Other experts on the staff take a different view and say that present delays are not due to election politics but to unavoidable government red tape and the necessity of having all plans checked by many different federal agencies to anticipate possible conflicts and mistakes.

Observers outside the Government say that there is much truth in both of these explanations. From the beginning the Defense Commission has been handicapped for lack of an overall master plan of defense. The prospective size, composition, and disposition of the Army and Navy at any given future date has been changed a number of times in recent months, and every change means a new estimate of the quantities of raw materials and supplies required. There has also been disagreement as to what materials should be obtained first, and whether or not to figure on continuing exports or imports. So many federal agencies rushed in to assist in the defense program that in not a few instances they are stepping on each others' toes and delaying rather than expediting matters. Sectional politics has also been a serious obstacle, and there are instances where the awarding of contracts to construct new factories has been delayed for weeks because of local pressure to locate the plants in this or that area.

Examples of the delays characterizing the defense program are found in the plans for producing aviation gasoline, toluene, and synthetic rubber from the petroleum industry.

Weeks, ago, as reported in The Oil and Gas Journal, the Defense Commission surveyed the capacity of the oil industry to produce aviation gasoline, and ascertained the probable amounts of fuel to be needed by the Army and Navy air forces. The results of the survey were kept confidential because they are regarded a military secret, but this necessary preliminary step was completed without undue delay. The next step was to standardize all aviation fuel, military and commercial, into four grades, 65, 73, 91, and 100 octane, and to determine the types of planes which will use each grade. This was complicated to a minor degree by the thought of some Army airmen that some time they may want to use fuel of more than 100 octane, but this possibility was fitted into the program by a plan to store blending agents and base stock separately so that the octane rating can be stepped up by increasing the proportion of blending agents. Next the specifications for 100-octane gasoline were revised to increase the tolerances of certain minor ingredients so that additional manufacturing processes may be used.

The next phase of the aviation-gasoline program was to draft a plan for storing reserve stocks to keep plants operating at a high level until the air force is built up to its scheduled size. The Army and Navy were given appropriations to build their own storage facilities and a plan was worked out under which the Government would buy the output of commercial plants and the refiners would store it at government expense. Here the program bogged down. It is taking the military experts more time than they anticipated to agree on the type and location of their own storage facilities, and if material progress has been made in constructing these facilities the information is held as a military secret.

Whys and Wherefores of Delays

Then the war-planning division of the War Department wanted to review the Air Corps plans for fuel reserves and requirements, and this necessitated some delay in launching the program. Another delay came in working out the details of storage contracts to be made with refiners. The plan was, and apparently still is, for the purchases to be made by the Defense Supplies Corporation, a newly formed subsidiary of the Reconstruction Finance Corporation, to which the R.F.C. allocated $1,000,000 for the purchase of capital stock and $50,000,000 for working capital. This corporation was to purchase the gasoline, contract with refiners to store it, and sell it to the Army and Navy (and possibly to civilians) at a price sufficient to repay operating costs and interest on the R.F.C. advance. A hitch developed in the form of contract, for the procurement experts and auditors began to worry over the possibility that the government might be contracting to buy something that did not exist because some of the gasoline might evaporate in storage. Apparently this will be taken care of by a clause in the contracts requiring the refiners to maintain the quantity and quality of aviation gasoline or its components stored by them, so that the concern supplying the storage will be responsible for all risks except war risk, including evaporation, deterioration, or accident. To date, however, no aviation gasoline-storage contracts have been announced, and officials admit that the program may not go ahead as rapidly as was first contemplated.

The toluene picture presents a different series of delays. After surveying the chemical field, the Defense Commission determined that the supply of coal-tar toluene would not be sufficient to supply the needs for trinitrotoluene explosives, but that sufficient toluene could be obtained from petroleum through recently perfected processes. Petroleum-toluene plants already constructed or projected by private capital would not produce enough for peak demands, but the peacetime market would scarcely justify much expansion in this field, so it was decided that the Army would build its own toluene plant under what is known as an "ordnance-owned, agent-operated" contract. Weeks ago the Humble Oil Co. was given a "letter of intent" instructing it to go ahead with plans to construct and operate such a plant on a site soon to be selected and under a contract soon to be signed. The exact form of contracts of this type was revised several times by the many officials and agencies involved, and the Humble contract eventually was negotiated, signed, and sent to the White House for final approval. For some reason not disclosed, President Roosevelt sent the contract back, either for revision or for more information, and after some delay it was again sent to the White House. What has happened to it since is a mystery, but it has never been announced.

Another phase of the toluene program called for the purchase and storage of whatever surplus supplies of either coal-tar or petroleum toluene appeared on the market from time to time. The Defense Commission counted on the Defense Supplies Corporation to purchase and hold these reserves, but for some undisclosed reason this plan fell through. At present the War Department is hoping that reserve supplies of toluene will be purchased and held by the agent-operators of its TNT plants now under construction.

Synthetic-rubber plans have been kicked around even more. In the first place, there is no agreement as to whether the Government should foster production or figure on obtaining supplies of natural crude and piecing out with substitutes and reclaimed rubber. Several months ago President Roosevelt felt that this country should become self-sufficient in rubber and should not depend on supplies from the Far East. Many of the defense experts were of the opinion that synthetic rubber would be so expensive and would take so long to get into quantity production that immediate attention should be paid to other products. Nevertheless, studies were launched as to the capacity of the petroleum industry to produce the necessary supplies of butadiene and other procurement problems which might arise if it became necessary to push the production of synthetic rubber on a large scale. Then, suddenly, the White House ordered the Defense Commission to drop the entire rubber subject and turn the whole matter over to Jesse H. Jones, secretary of commerce, federal loan administrator, and boss of the R.F.C. and its many subsidiaries. If anything has been done about synthetic rubber since then it is a closely held secret.

Delays of this sort may be due entirely to a wholesome desire to make haste slowly and to plan soundly. There may be no need for acquiring aviation gasoline and toluene months before there are planes and powder factories to use them. But whatever the reasons, there is no doubt that defense procurement plants are not advancing as rapidly as at least some of the planners thought they would be only a few weeks ago.

William Spraragen (left), technical secretary of the American Welding Society, receiver of the Miller Memorial Award for 1940

H. J. French (center) and T. N. Armstrong (right), recipients of the Lincoln Gold Medal for 1939-40

Welding Society Awards Miller and Lincoln Medals at Meeting

CLEVELAND, Ohio, Oct. 21.—Presentation of the 1940 Miller Memorial Award and the Lincoln Gold Medal for 1939-40 featured the opening session of the American Welding Society's annual meeting here today at Hotel Cleveland. The Samuel Wylie Miller Memorial Medal was awarded to William Spraragen, technical secretary of the American Welding Society and editor of "The Welding Journal." Award of the Lincoln Gold Medal, donated to the American Welding Society by James F. Lincoln, president of Lincoln Electric Co., Cleveland, was made to H. J. French and T. N. Armstrong, Jr., of the International Nickel Co., Inc., New York City.

The award of the Miller Medal was made for conspicuous contributions to the art and science of welding during 21 years in the field, also for the quality and intensity of the service which has been marked throughout by unusual energy, loyalty, and integrity.

The Lincoln Award, which is presented each year for the paper which contributes most to the year's development of welding, was made for "Weld Hardening of Carbon and of Alloy Steel," presented at the annual meeting in Chicago, October 23-27, 1939. The paper covered test methods, carbon steels, ternary alloy steels, welding speed and plate thicknesses, precooling, maximum hardness obtainable, preheating steel with high hardening capacity, comparisons of complex alloy and carbon steels.

Illinois Supreme Court Restrains Strip Wells

NASHVILLE, Ill., Oct. 22.—A decision rendered by the state Supreme Court which may have a far-reaching effect on the drilling and development of Illinois roadway strips has been announced here.

The decision affects the Magnolia v. West case in which Magnolia Petroleum Co. contended that the conveyance of a roadway in the West Cordes entitled the owner to surface rights but not to mineral rights. The high court upheld this contention, reversing the decision of a lower court.

The roadway was developed by O. Wiese against whom Magnolia obtained an injunction preventing the drilling of wells. Wiese and West appealed the case and the injunction was dismissed.

This decision appears to uphold the rights of lessors of land adjoining these roadway strips and to protect them from ruinous offset drilling to prevent drainage by wells drilled thereon. Other such strips have been drilled, particularly in the Salem and Louden fields and the way appears open for a number of trespass and damage suits in these fields.

Mexico Cancels Contract With Japanese-Controlled Company

MEXICO CITY, Oct. 22.—Desire to maintain complete solidarity of the Western Hemisphere was advanced by the Mexican Government today as the basis for canceling an oil-exploitation contract with the Japanese-controlled Veracruzana Co. The contract, Mexican officials explained, had been first approved last week in a perfunctory fashion. The exploration contract covering 247,000 acres in Vera Cruz State had been in preliminary form for more than 3 years. It antedated the 1938 expropriation by 1 year since a preliminary agreement was signed May 15, 1937, it was declared here.

At the same time, the Mexican Government rejected a "more than satisfactory" bid by Japanese agents for 18,000 tons of scrap iron because of Japanese-American tension over this basic material. "To demonstrate Mexico's adherence to the hemisphere policy of solidarity," said a prepared release, "the president desires that what was actually not only an error in judgment but an illegal act, be rectified immediately."

There was no indication here whether the United States had entered a protest over the Japanese contract. It was considered logical, however, that the Department of State at Washington would consider issuance of a concession to Japanese an unfriendly act. Japanese success in obtaining a concession for exploitation would be especially counter to United States interest in view of the 1938 confiscation of properties owned by American companies.

Klein Elected Executive Vice President of Texas Co.

Harry T. Klein has been elected executive vice president and general counsel of the Texas Co., according to W. S. S. Rodgers, president. Mr. Klein had been vice president and general counsel of the company since 1933. Mr. Rodgers at the same time announced that C. E. Olmsted, vice president in charge of the company's refining department, who was recently elected a director, has been placed in charge of the export department, and that Michael Halpern, general manager of the refining department, has been elected a vice president to assume Mr. Olmsted's position in charge of that department. All three men have had long careers with Texaco.

Mr. Klein became associated with the Texas Co. in 1921 as a member of the legal department. He was elected general counsel of the company in 1925, vice president in 1933, and was elected a director of the Texas Co. and the Texas Corp. in 1935. Later that year he also became a member of the executive committee.

HARRY T. KLEIN

DEATHS

FRED EHRENSBERGER, 24, oil-field employe of Houston, Tex., died instantly last week when he fell from a derrick at Joe's Lake, Tex. He is survived by his widow and a daughter.

WILLIAM B. KEARNEY, 70, of Stanolind Pipe Line Co., Tulsa, died October 17. Mr. Kearney had been a resident of Tulsa for 25 years. His survivors are the widow, three sons and three daughters.

JOHN McDOWELL, 85, veteran oil producer of Elk Township, Clarion County, Pennsylvania, died at his home October 14 after an extensive illness. He was born in Elk Township and was engaged in the oil business for more than 30 years.

P. K. KELLEY, 58, former vice president of Union Sulphur Co., Sulphur, La., died at a Houston, Tex., hospital October 18. For the past 15 years he has resided in Houston, where he has operated independently in the oil and gas-lease business. The body was taken to Topeka, Kans., for burial. He is survived by three sisters, all of the latter city.

JAMES S. HARRISON, 46, partner in the firm of Harrison-Dillard Oil Co., Houston and Wichita Falls, Tex., died October 16 at a hospital in Dallas, Tex., where he had come for treatment for an illness that he contracted last spring. Mr. Harrison made his home both at Houston and at Wichita Falls. He formed the partnership of which he was a member in 1933.

PAUL RAYMOND MATTOCKS, 66, of El Dorado, Ark., died October 17, following an illness of 3 years. Mr. Mattocks was president of the B. H. M. Oil Co. until his illness forced his retirement. He had operated in Oklahoma, Louisiana, and Texas fields, and had been active in oil circles in El Dorado since discovery of the field there. Survivors include his widow, a sister, and three brothers.

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THE MARKETS*

CRUDE OIL: Discount of gravity in determining value of oils in North Louisiana and Arkansas marks the most significant change of years in the crude market. High-gravity oils were reduced 1 to 6 cents per barrel in the North Louisiana-Arkansas territory October 17 Standard Oil Co. of Louisiana in initiating the adjustment pointed out that weakness of the gasoline market has reduced the relative value of high-gravity oils.

REFINERY: Improvement in the tank-car market for heating oils is the current feature of refinery products. Motor fuel continues to resist seasonal depression of consumption. Gasoline movement from refineries remains at a high level. Estimates came from the Bureau of Mines this week that domestic demand for motor fuel in November will be 5.5 per cent greater than the actual for the same month last year.

TANK-WAGON AND POSTED DEALER: Kerosene tank-wagon prices were advanced 0.3 cent per gallon in most of the New York and New England marketing territory October 18 indicating the growing strength of light fuel oil. Metropolitan New York gasoline prices were advanced 0.4 cent per gallon to the tank-car and tank-wagon trade October 22.

FINANCIAL: Oil stocks gained fractionally. The range of trading is narrow. Average of 30 representative stocks for the week ended October 19: High, 21.49; low, 20.87 close, 21.21. Week ended October 12: High, 21.72; low, 20.99; close, 21.18.

*Detailed information in Market Section.

A.I.M.E. Speaker Says Control Would Impede Defense

By L. P. STOCKMAN

THE fall meeting of the Southern California section, Petroleum Division, A.I.M.E., held in Los Angeles October 17 and 18 at the Ambassador Hotel, was exceptionally well attended, the registration exceeding the 956 registrations made last year. The program was of a more technical nature than heretofore although several of the 17 papers presented furnished diversification to balance the program. Each of the four sessions during the 2-day meeting was presided over by a different chairman and in each case longer discussions were encouraged. The permitting and encouragement of general discussions is in response to an oft-expressed desire on the part of many members to tie in the material covered by the several papers to actual conditions in the field and under operating conditions. The program ran along very smoothly as the four chairmen of the technical sessions were given full authority to conduct their respective sessions according to their own judgment. Admiral Sinclair Gannon, U.S.N., was the speaker at the informal dinner and smoker in the French Room at the Ambassador Hotel, Thursday evening, October 17.

John R. Suman has been nominated for president and director of the national organization, and Victor H. Wilhelm, of Texas Co. of California, has been nominated for chairman of the Southern California section. Mr. Suman will succeed H. G. Moulton, the present incumbent, and Mr. Wilhelm will succeed Harry P. Stolz. The various sectional chairmen are normally inducted into office in December of each year. Eugene A. Stephenson has been nominated for chairman of the Petroleum Division to succeed T. V. Moore, and Harry P. Stolz, Raymond B. Kelly, and Veleair C. Smith have been nominated for associate chairman. Harold Vance has been nominated for secretary-treasurer of the Petroleum Division. The results of the election, conducted as usual by mail ballot, will not be made known until late in December. The Southern California section has shown an increase in membership and attendance at its technical sessions for several successive years and the scope of material presented is no doubt responsible in part for this record.

Paper on Slim-Hole Drilling

W. H. Geis, of Union Oil Co., and a member of the executive committee of the Petroleum Division, presided at the opening technical session October 17, and Joseph Jensen acted as chairman of the afternoon session. On Friday, H. N. Marsh of General Petroleum Corp. presided at the morning session and R. P. McLaughlin acted as chairman for the afternoon technical session. Harry Stolz, chairman of the Southern California section, presided at the Thursday evening dinner and smoker at which the guest, Admiral Gannon, delivered a timely and interesting address. The paper on "Slim-Hole Drilling in the Gulf Coast," by I. W. Alcorn, of Pure Oil Co., Houston, Tex., highlighted the morning session on October 17, as this method of drilling is receiving more than passing interest in California. Mr. Alcorn brought out that slim-hole drilling reduces the cost from one-half to one-quarter that of the normal large hole in exploratory work which means that two to four wells can be drilled for the price of one large hole.

Tracy L. Atherton discussed a "New Method of Plotting Slant Holes," and pointed out that the mapping of slant-hole oil fields is complicated by the fact that relationships between wells are subject to variations in three dimensions, which relationships are not readily adaptable to representation on a plane surface. Formalized perspectives usually expand into an undecipherable maze of lines and peg models with the necessary supporting dividers serve only to awe the beholder with their complexity. Because of these elaborate plots, when used in conjunction with the individual vertical projections of the wells, a straight-hole equivalent projection method has recently been devised and developed. Common practice of oil-well surveyors is to supply the owner with a tabling of the survey and a plan view plotted against the true meridian. If a vertical projection is plotted it is usually separated and shows vertical depths against the projection of the stations along a section line joining the top and bottom of the hole on the plan view. A more practical method would be to plot the section line of the plan parallel to the abscissa of the vertical projection. If this is done, then any line parallel to the base line will pass through the points on each projection which represent a single point in the hole.

VICTOR H. WILHELM

Nominated for chairman, Southern California Section, A.I.M.E. Mr. Wilhelm is with Texas Co. of California

Other Technical Papers

Kenneth Bravinder, Dean Shelton and J. E. Koogle of Union Oil Co. in a paper on a "New Method of Constructing Subsurface Models," revealed the fact that the use of celluloid has been found highly advantageous in the construction of subsurface models because of short construction time, ease of handling the material, ease of reworking sections, and low cost involved.

William N. Roper, of Western States Gasoline Corp., presented an unusually interesting paper on "Changes in Natural Gasoline Manufacturing," in which he traced the changes and advances in equipment and method of operation from 1918 to date.

Charging the Government with failure to heed the reports of its own engineers, R. E. Collom, Continental Oil Co. vice president, speaking at the Friday afternoon session, asserted that government control of the petroleum industry would undoubtedly impede rather than aid the machinery of national defense.

"There is danger that in the generally sympathetic public attitude toward preparedness and national defense," Mr. Collom stated, "Government will not be content with enforcement of such administrative and operating adjustments as may be necessary to facilitate the coordination of the petroleum industry with military requirements, but will seize the occasion to gain some measure of control of the petroleum industry. Consummation of such a move would not only be unfortunate for the oil business, but would undoubtedly impede rather than aid the machinery of national defense.

"Over a long period of years it has been the practice of Government and government officials to charge the petroleum industry with waste of one form or another, as the political means of provoking legislation which has to do with some degree of regulation or hoped-for control.

Much Constructive Work Done

"To say that in times past, particularly in the pioneering stages of development, there has been no waste, would be to belie the facts. It does not follow, however, that an industry which operated roughly and in many respects wastefully as a pioneer will always do so. Government and government engineers were early advocates of conservation laws to protect underground deposits of petroleum and gas and prevent waste. Regulatory and conservation laws were passed in many states and much constructive work was done. Most of this work was done under the guidance of engineers. Further, these laws are being enforced with the sympathetic cooperation of most of the industry.

"Unfortunately, the old formula for promoting adoption of broad principles of engineering by industry through the technologic provisions of regulatory laws still tempts the politician as a sure-shot way of getting the oil business in the hole. There has been a marked fundamental change in the formula. The petroleum industry has long since gone on 'total engineering,' particularly in the departments of exploration, development and production. The politician or bureaucrat who now starts carping about woeful waste must do so without benefit of engineers. Isolated examples of waste and technical short-

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B. of M. Estimates November Demand at 107,100,000 Bbl.

WASHINGTON, D. C., Oct. 22.—Crude runs to refineries averaging 3,470,000 bbl. daily will be sufficient to meet the Bureau of Mines' estimated demand for motor fuel in November.

Exports of 3,900,000 bbl. and losses of 2,500,000 bbl., minus imports of 3,400,000 bbl. indicate total demand for domestic crude will be 107,100,000 bbl. next month, a daily average of 3,570,000 bbl. Demand for domestic crude will be 10,600 bbl. below the daily average for October.

Total demand for motor fuel is calculated at 51,600,000 bbl. for November, a decrease of 3,000,000 bbl. from the October estimate. The estimated daily average crude-oil demand by states is shown below:

State—	Forecast Nov. 1940	Forecast Oct. 1940	Actual Nov. 1939
Texas	1,291,000	1,305,200	1,336,000
California	583,000	583,200	639,800
Oklahoma	413,000	403,500	457,100
Illinois	385,000	405,200	365,000
Louisiana	274,000	274,200	261,000
Kansas	186,000	178,700	162,600
New Mexico	104,000	104,500	100,200
Wyoming	75,000	75,200	66,800
Arkansas	71,000	70,700	58,400
Michigan	51,000	53,900	80,500
Pennsylvania	45,100	45,100	53,300
Montana	18,900	17,700	17,800
Indiana	14,200	9,300	6,500
Mississippi	13,800	9,000	6,700
New York	12,500	12,000	14,900
Kentucky	12,300	12,200	19,400
West Virginia	8,500	9,100	12,800
Ohio	8,000	8,000	9,300
Colorado	3,700	3,900	4,100
Total	3,570,000	3,580,600	3,665,900

UNITED STATES SUPPLY AND DEMAND

Eight months, 1940 and 1939. (All figures in thousands of barrels)

Crude Oil

8 Months—	Total supply	Total demand	Excess demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Aug. 31‖
1940	938,014	913,204	*24,810	*2.7	911,668	26,346	877,012	36,192	‖264,252
Daily average	3,844	3,743	.....	..	3,736	108	3,594	148	.....
1939	836,645	873,940	37,295	4.2	815,193	21,452	825,718	48,222	238,479
Daily average	3,443	3,596	.....	...	3,355	88	3,398	198	.....
Increase, 1940	101,369	39,264	.....	...	96,475	4,894	51,294	†12,030	25,773
	21.1%	4.5%	.....	...	11.8%	22.8%	6.2%	†24.9%	10.8%

Refinery Products—Motor Fuel

8 Months—	Total supply	Total demand	Excess demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Aug. 31§
1940	407,810	404,696	*3,114	*0.8	407,739	71	387,833	16,863	84,836
Daily average	1,671	1,659	.....	..	1,671	.....	1,590	69	.....
1939	396,035	393,742	*2,293	*0.6	396,035	.....	362,554	31,188	73,072
Daily average	1,630	1,620	.....	...	1,630	.....	1,491	129	.....
Increase, 1940	11,775	10,954	.....	...	11,704	.....	25,279	†14,325	11,764
	3.0%	2.8%	.....	...	2.9%	.....	7.0%	†4.6%	16.1%
Kerosene									
1940	48,067	46,167	*1,900	*4.1	47,999	68	43,419	2,748	9,476
1939	45,110	43,548	*1,562	*3.6	45,110	.....	38,208	5,340	9,361
Increase, 1940	2,957	2,619	.....	...	2,889	.....	5,211	†2,592	115
	6.6%	6.0%	.....	...	6.4%	.....	13.6%	†48.5%	1.2%
Gas Oil and Residual Fuel Oil¶									
1940	351,560	345,330	*6,230	*1.8	331,142	20,418	319,786	25,544	139,462
1939	317,496	325,365	7,869	...	305,456	12,040	291,095	34,270	138,987
Increase, 1940	34,064	19,965	.....	...	25,686	8,378	28,691	†8,726	475
	10.7%	6.1%	.....	...	8.4%	69.6%	9.8%	†25.5%	0.3%
Gas Oil and Distillate Fuels									
1940	124,609	117,664	*6,945	*2.4	122,422	2,187	103,032	14,632	45,041
1939	105,659	108,450	2,791	2.6	105,488	171	86,314	22,136	37,626
Increase, 1940	18,950	9,214	.....	...	16,934	2,016	16,718	†7,504	7,415
	17.9%	8.5%	.....	...	16.1%	878.9%	19.4%	†33.9%	19.7%
Residual Fuel Oils									
1940	226,951	227,666	715	0.3	208,720	18,231	216,754	10,912	94,421
1939	211,837	216,915	5,078	2.3	199,968	11,869	204,781	12,134	101,361
Increase, 1940	15,114	10,751	.....	...	8,752	6,362	11,973	†1,222	†6,940
	7.1%	4.9%	.....	...	4.4%	53.6%	5.8%	10.1%	†6.8%
Lubricating Oils									
1940	25,243	23,928	*1,315	*5.5	25,243	.....	15,701	8,227	8,457
1939	21,852	22,482	630	2.8	21,852	.....	14,998	7,484	7,069
Increase, 1940	3,391	1,446	.....	...	3,391	.....	703	743	1,388
	15.5%	6.4%	.....	...	15.5%	.....	4.7%	9.9%	19.6%
Petroleum Wax (Thousands of pounds)									
1940	403,592	366,881	*36,711	*10.0	342,720	60,872	219,115	147,766	112,359
1939	303,541	324,708	21,167	6.5	282,240	21,301	168,422	156,286	108,173
Increase, 1940	100,051	42,173	.....	...	60,480	39,571	50,693	†8,520	4,186
	33.0%	13.0%	.....	...	21.4%	185.8%	30.1%	†5.5%	3.9%

*Excess supply. †Decrease. ‡Crude only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products based on refinery shipments. ‖Does not include 12,798,000 bbl. of heavy oils in California. Comparable figure for August 31, 1939, 14,253,000 bbl.

Crude Oil Run to Stills and Total All Oils

8 Months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Natural gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Aug. 31*
1940	53,049	92,887	862,066	42.9	35,705	1,002,450	951,690	575,530
Daily average	218	381	3,533	..	146	4,108	3,900	
1939	39,690	128,156	810,604	44.7	32,425	888,722	919,866	535,902
Daily average	163	525	3,336	...	133	3,657	3,785	.....
Increase, 1940	13,359	†35,269	51,462	...	3,280	113,728	31,824	39,628
	33.7%	†27.5%	6.3%	...	10.1%	12.8%	3.5%	7.4%

*Total all oils includes crude and refined products, natural gasoline and benzol. Stocks August 31, 1940, represented 148 days' supply, which compares to 142 days on the same date in 1939. †Decrease. ‡Does not include natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

A. I. M. E. Speaker Says Control Would Impede Defense

(Continued from Page 23)

comings still exist, but waste as such is not compatible with sound engineering and therefore is not characteristic of the petroleum industry.

"Many congressional hearings have been held in an attempt to uncover the seriousness of this alleged waste. A perusal of the transcript fails to show that any statement supporting the existence of waste of critical importance was presented or that such a statement could be made. On the other hand, there were available reports and data prepared by the Government's own technologists which show the progress that is being made on all fronts in oil-company, private and government laboratories in technologic research.

"As its response to and denial of the unsupported blanket charge of waste, the oil industry could endorse the reports submitted to the Cole committee by engineers of the United States Bureau of Mines and U. S. Geological Survey and, in fact, adopt these reports as its report."

In conclusion, Mr. Collum stated: "Truly most vital to national defense, the petroleum industry is prepared and ready to furnish almost unlimited quantities of fuel for planes, ships, and tanks. Why do not the executives of Government take a cue from its engineers and approach the petroleum industry in a friendly and cooperative spirit with the object of determining where and how Government can best serve industry and industry can best adapt itself to needs of Government in preparing for our national defense and the continuance of our American destiny?"

The successful meeting reflects the excellent cooperation of several committees involved. The technical program committee was headed by C. P. Watson, who is vice president of Seaboard Oil Co. and vice chairman of the papers and programs committee of the Petroleum Division. R. H. Pence, of the California oil administrator's staff, was associate chairman of the technical program committee of the Los Angeles meeting committee and he also acted as chairman of the publicity committee. E. G. Trostel and T. A. Atkinson were chairman and vice chairman respectively of the arrangements committee. The Southern California section of the Petroleum Division of the A.I.M.E. is headed by Harry P. Stolz, chairman. Henry Mulryan is vice chairman of the section and Walter D. Abel is secretary-treasurer. Other members of the Southern California section include Herbert Hoover, Jr., H. B. Menardi, G. A. Joslin, and H. T. Wyatt.

Refinery Expansion

Great Advances in Engines And Fuels Predicted

DETROIT, Mich.—Earl Bartholomew, director of the engineering research laboratories of the Ethyl Gasoline Corp., who in 1930 foresaw almost exactly the developments in fuels and engines of the last 10 years, predicts that automotive progress during the next decade will dwarf the achievements of the thirties. Visualizing the car of 1950, Mr. Bartholomew forecasts striking gains in fuel economy. He foresees smaller engines in both passenger cars and commercial vehicles, with still higher compression ratios and better volumetric efficiency, and with substantially greater power output.

EARL BARTHOLOMEW

The Ethyl laboratories in Detroit, Mr. Bartholomew discloses, are completing successful tests with engines having compression ratios above 11 to 1 and are requiring a fuel of decidedly higher antiknock value than is now generally available. Gasoline of 95-road-octane quality, however, in the opinion of Mr. Bartholomew, will be in supply at roadside service stations within the next 5 years. Such fuel, he said, might result in an improvement in economy of 35 per cent or more, with performance even better than it is today.

Ten years ago, it is recalled, Mr. Bartholomew envisioned the possibilities in engine improvement that have since been realized. Although the average compression ratio of the automobile engine of 1930 was barely 5 to 1, Mr. Bartholomew, in an address delivered at Stevens Institute of Technology in that year, pictured the efficiencies and horsepower output that could be obtained with a compression ratio of 6 to 1, or even 7 to 1.

Such engines and fuels, it is pointed out, seemed a long way off in 1930, yet among the 1941 cars now on display at the various auto shows throughout the nation, at least 10 models have compressions of 7 to 1 or more. Optional compression ratios of 7 to 1 or more are available on a number of cars having slightly lower standard compression ratios. Average compression ratios for all makes and all models of 1941 cars is 6.66 to 1 compared with 6.43 to 1 in 1940. At least 25 of the new models have higher compression ratios than last year. Owing to the sharp rise in the antiknock quality of both regular grade and premium fuels during the past year, one model of a well known higher-priced car was stepped up one full compression ratio—from 6.25 to 7.25. Most of the lower-priced groups show increases, but the greatest gains were recorded in the so-called "middle group" and the more expensive cars.

Mid-West Adds Two Units At Michigan Refineries

CHICAGO.—Mid-West Refineries, Inc., owner of a refinery at Alma, Mich., has recently enlarged the scope of its activities by acquiring the two plants of the Imperial Refining Co. at Grandville, Mich.

The first step taken by B. J. Skinner, president of Mid-West, after the deal was completed, was to start installation of a two-coil selective Dubbs cracking unit, with a rated capacity of 2,000 bbl. a day of topped Michigan crude. The second step was to change the name of the newly acquired plants from Imperial to Mid-West.

Two years ago Mr. Skinner signed a license agreement with Universal Oil Products Co. and installed a Dubbs cracking unit in the Alma plant, designed to crack 1,000 bbl. a day of topped crude from the Porter, Michigan, field, and at the same time to reform 100 to 200 bbl. a day of Michigan straightrun gasoline to improve its octane rating. Later a U.O.P. catalytic polymerization unit was added to produce high-octane polymer gasoline from the cracked gases.

Today another heater is being added which will give the unit a rated cracking capacity of 1,900 bbl. and reforming capacity of 300 bbl. a day of naphtha. The license agreement has been extended to cover the operation of both units. The new cracking unit, like the one installed earlier at Alma, was designed by Universal and is being built by the Frick-Reid Supply Corp.

T. E. McFall and V. M. Skinner are vice presidents of Mid-West, C. L. Fillmore is secretary and treasurer, and John Marshall is vice president and general refinery superintendent.

Details for Humble Toluene Plant Nearly Completed

WASHINGTON, D. C.—Plans for construction of a $12,000,000 toluene plant by Humble Oil & Refining Co. at Houston, Tex., are nearly completed and a contract is expected to be closed for it within a few days, it was learned here last Saturday. The War Department announced in September that it would work out arrangements with Humble to construct and operate a plant of this kind in or near Houston as a national-defense measure. Details for its construction are now nearly completed.

If the arrangement follows the lines of other national-defense plants, the Government would finance construction of the plant and its equipment and its erection would be supervised jointly by Humble and the Government. Once completed, the Government would turn it over to the company which would operate it to fill government contracts.

Consumers' Cooperative Installing Copper-Sweetening System

REGINA, Sask.—The Consumers' Cooperative Refiners, Ltd., announces subsequent to the completion of a Universal Oil Products Co. cracking unit at its refinery in Regina, Sask., plans have been completed for the installation of a 1,500-bbl. per day liquid-process type Perco copper-sweetening unit. It will be completed and put into operation in about 60 days.

Douglas Building Refinery Near Los Angeles, Calif.

CHICAGO.—Douglas Oil & Refining Co. has signed a license agreement with Universal Oil Products Co. and is building in Los Angeles County, California, a two-coil selective Dubbs cracking unit wtih crude-distillation equipment. Universal engineers designed the unit, including treating equipment and other auxiliaries, and Fluor Corp. of Los Angeles is building it. Provision is made in the design for future increases in capacity and for the addition of a U.O.P. catalytic polymerization unit.

Following is a list of officers of Douglas Oil & Refining Co.: Chairman of the board, Donald W. Douglas, president of Douglas Aircraft Co.; president, George W. Stratton, associated also with Mr. Douglas in the Douglas-Stratton Oil Co.; vice president and director of operations and construction, William P. Andrews; secretary-treasurer, A. L. Bergere; assistant secretary-treasurer, David C. Moore.

Natural Gas News

Sale of Michigan Gas Properties Presented for S.E.C. Approval

SAGINAW, Mich.—An $800,000 deal involving proposed sale by W. C. Taggart and others of the Austin natural-gas field in Mecosta County to Michigan Consolidated Gas Co. has been presented in Washington, D. C., for approval of the Securities and Exchange Commission. Hearing is scheduled for October 24. The commission, announcing the application, filed under the Holding Company Act, said:

"The company stated the primary reason for acquiring title to this gas field is to use it to store natural gas and that the acquisition is the first step in a general program which it believes will enable it to complete natural-gas service to its customers in all of the districts which it now serves.

"The company further stated that it would be economically practicable to purchase gas from the Panhandle Eastern Pipe Line Co. during summer months, for use during fall and winter in Detroit, Grand Rapids and Muskegon districts. For that purpose a pipe line from the Detroit area to the Austin field would be necessary."

Michigan Consolidated now buys Austin field gas for use in Muskegon service on a contract entitling it to buy all of the gas down to a rock pressure of 50 lb. per sq. in.

Canadian River Hearing Set For October 28 by F.P.C.

WASHINGTON, D. C.—Canadian River Gas Co. and Colorado Interstate Gas Co., respondents in a natural-gas-rate investigation, have applied to the Federal Power Commission for a rehearing and stay of the commission's order of September 13 consolidating the proceedings and ordering a public hearing to be held at Denver, Colo., on October 28. The three matters consolidated for hearing are the commission's own investigation of the status and rates of the companies concerned, the complaint filed by the city and county of Denver, and the complaint filed by the Public Service Commission of the State of Wyoming.

There has never been any affiliation between the Public Service Co. of Colorado and any of the parties responsible for the organization of the Colorado Interstate Gas Co., the joint petition for rehearing states, but adds that Public Service did subsequently become owner of 15 per cent of the outstanding capital stock of Colorado Interstate with representation on its board of directors. Public Service distributes and sells gas in Denver, which gas is delivered at the city gate by Interstate.

Respondents also contend there has never been any common management or control of the Colorado-Wyoming Gas Co. and of either of the respondents; that the Colorado-Wyoming pipe line is not a part of the project of bringing natural gas to Colorado points but was constructed as an independent project by others, and therefore does not constitute an extension of the Colorado Interstate lines with a continuous flow of gas from Texas to Wyoming.

The Canadian River company, applicants state, has no contractual relations with Colorado-Wyoming and neither Canadian nor Interstate has any contractual relations with the Cheyenne Light, Fuel & Power Co., distributor of gas in Cheyenne, Wyo. The application states a joint investigation will require hearings and the production of evidence having no bearing on the matter of rates charged by the respondents, and therefore cause unjustified expense.

Pipe-Line Facilities Are Ready For Any Emergency

(Continued from Page 11)

brought in government intervention to keep traffic moving. At that time much coal was hauled over the railroads for industrial plants in sections where fuel is furnished by natural-gas trunk lines extending for hundreds of miles which did not exist then. Furthermore, all of the country's refined-products lines have been built in the meantime. And crude-oil lines have been enlarged and extended so that today they have ample capacity for handling emergency demands.

Pipe-line systems could interconnect their lines in a short time, should a condition of national emergency occur.

One-Fourth of Refining Capacity Is in Reserve

By W. T. ZIEGENHAIN

OIL refineries are operating in 36 of the 48 states. They are capable of processing 4,500,000 bbl. of crude daily to satisfy our entire domestic demand and leave a 25 per cent margin to meet any emergency. This emergency may be in the form of a storage program for national defense, an unusually heavy export schedule resulting from more intensive war activities abroad or it may result from bringing the war to American soil.

Fortunately, the refining industry has consistently improved its equipment in the past years. It has not hesitated to discard obsolete processes as soon as improved means were found to be practicable. The aim of the industry has been definitely in the direction of better products and toward mass production to hold down costs and permit the economical adoption of intricate processing methods. As a result the country now finds its refineries capable of producing more and better products than any other country and the program of preparedness is simply calling for a correlation of refinery operations to most effectively and economically meet the new demands.

The nation has two sources of information to draw from in mapping its new program, the observed military strategy of the present war and our contry's experience in the first World War. From each it becomes increasingly apparent that a large source of high-quality aviation gasoline is all-essential. In this country we have close to 20 refineries equipped to make the highest grade of aviation gasoline and their potential output of this 100-octane material is 30,000 bbl. daily. Also there is approximately 1,000,000 bbl. of this already in storage in this country. It will not be difficult to build additional capacity faster than even the most severe war needs might dictate.

It is interesting to note that in the first World War military planes used 60-octane fuel. Now the majority of combat planes require 100-octane fuel. This transition has given gasoline-driven planes about the same fuel efficiency as diesel-powered planes and of course gives the gasoline-driven planes a wide margin of advantage in the speed of taking off and maneuvering. But in addition to the 100-octane motor fuel used in combat planes, there are other grades of fuel which are equally important from the standpoint of preparing for or carrying on a war. These fuels would power the trainer planes, the tanks and trucks that have become such important units in a modern military operation and the thousands of machines that help to manufacture and carry war materials through the plants and into the field depots. These fuels do not need to have the same qualities demanded of fighting-grade aviation gasoline and as a result of organizing the National Defense Commission, the most economical and effective program of supplying all grades of fuels has been tentatively worked out. The exact specification for these will be given in detail when government inquiries for bids on future deliveries are made known through the Bureau of Aeronautics, Navy Building, Washington, D. C., or the Army Air Corps, Wright Field, Dayton, Ohio.

Tentatively, four grades of gasoline have been specified. In general the classification has been based upon octane requirements. The top grade calls for 100-octane material and will be used in combat planes. The next grade is specified as 91-octane and will be used for bombers and trainers. The third grade will have an octane value of 73 and will be used in military trucks and station wagons. The fourth and lowest-grade material has a specified minimum-octane number of 65 and will be used in the hundreds of low-compression motors scattered throughout the shops of federal arsenals, storage repair and supply depots.

To date, no gasoline has been purchased by the Government under these specifications but actual commitments will be made shortly after the first of the year. By that time, it is believed, the number of agencies in Washington making federal purchases of petroleum supplies will be limited to a relative few, possibly to one or two.

The correlation of manufacturing these products has been so thorough and the ability of the domestic refining industry to meet every possible anticipated war demand with relative ease has caused the authorities in Washington to look toward the refining industry for help in supplying certain vital needs outside the field of strictly petroleum products.

One of the most important of these is toluene. This is the basis for the explosive trinitrotoluene or TNT. Another is benzene, used in the manufacture of picric acid, a violent explosive, and the third is xylene, which is used in the manufacture of trinitroxylene, another violent explosive.

Dr. Gustav Egloff, head of research for the Universal Oil Products Co., has estimated the potential production of these from oil-refinery gases as 85,000,000,000 lb. annually. Then, and of almost equally impressive weight, is the ability of our refineries to produce synthetic rubber. He has estimated the quantity available from refinery gases to be 200,000,000,000 lb. annually. This would be produced from the ethylene produced at our refineries. A unit capable of producing 10,000 lb. of this material daily is under construction now.

Independent Association Flays Malpractices of Regulators

(Continued from Page 15)

of finding oil is undergoing constant refinement as the ability improves to reconstruct the conditions under which the rocks and the oil were deposited. Stratigraphic and sedimentation studies will play an increasingly important role in the future discovery of petroleum reserves, in the opinion of Mr. Levorsen. He recited the history of exploratory methods from the time surface examination was sufficient to discover all the oil required. Later core drilling became widely used to obtain structural information and then came the various geophysical methods. Mr. Levorsen said that sedimentation and stratigraphy furnish the approach to a knowledge of unconformities and all that they signify: to wedge belts of porosity; to sand lenses; shoestring sands; overlaps; paleogeology, geologic history; the environment of the reservoir rock; and to the various layers of geology.

Russell B. Brown, Washington, D. C., general counsel for the association, reviewed the status of several bills pending in Congress which have particular interest for the oil industry. He told of unrelenting work to restore the barrier to imports through invocation of the escape clause in the Venezuelan trade agreement. The authority to seek agreements within the industry for eradication of injurious practices is a continuing objective, Mr. Brown said. Publicity evolving around the omnibus antitrust suit filed by the Department of Justice is an effort to force a philosophy of government through administrative rather than judiciary channels, in Mr. Brown's opinion. Criticism was caustic on the tax bill which, he said, even few experts in Washington understand.

Winston P. Henry, of Houston, Tex., president of Putnam Oil Co., reported for the committee he headed that study of the T.N.E.C. hearings revealed no cause for federal control of oil.

A suggestion of the tax committee that the I.P.A.A. engage a tax expert for full-time service in Washington was referred to the executive committee.

Hatton W. Sumners, congressman from Dallas, was the speaker at the annual banquet which concluded the meeting the evening of October 18.

All Officers Reelected

All officers of the association were reelected for another term. They are: Mr. Buttram, Buttram Petroleum Corp., Oklahoma City, president; Mr. Fell, Simpson-Fell Oil Co., Ardmore, Okla., executive vice president; Mr. Brown, Washington, general counsel; N. T. Gilbert, Midstates Oil Corp., Tulsa, treasurer; C. E. Buchner, Tulsa, executive manager; T. J. Steuart, Washington, assistant to the president; Minor S. Jameson, Jr., Washington, statistician and economist; L. E. Smith, Tulsa, director Petroleum Research Bureau; Charles Van Vleck, Tulsa, field manager and W. H. Little, Tulsa, advertising manager. Six new members were placed on the executive committee which was enlarged to 17 positions. Previously the bylaws authorized 15 members. Merle Becker of St. Louis, Mo., W. C. McBride, Inc., was named to fill the post of C. F. Buchner of the same company who is inactive at present because of ill health. Walter Goldston, Jr., Houston, Tex., succeeds Winston Henry, whose term expired. Harry Leonard of Roswell, N. M., succeeds Van S. Welch of Artesia. Other new executive committeemen are: C. A. Smith, Jr., Grand Rapids, Mich.; C. A. Johnson, Los Angeles, president of Holly Oil Co., and R. J. O'Brien, Shreveport, La.

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PROGRAMS AND MEETINGS

Recently elected board of directors of the Petroleum Accountants Society of Oklahoma, Tulsa. Back row: R. L. Rush, Sinclair Prairie Oil Co.; M. H. Massey, Stanolind Oil & Gas Co.; J. B. Bass, Continental Oil Co.; N. C. Cross, Superior Oil Corp., and B. E. Witchell, Phillips Petroleum Co. Front row: F. T. Anderson, Darby Petroleum Corp.; A. W. John, Tide Water Associated Oil Co.; R. B. Hansen, O. O. Owens and Associated Companies, and L. E. Tustison, Carter Oil Co. The society will meet Thursday night in one of its regular monthly meetings. The purpose of the society is to render service for the general benefit of all its members, particularly with respect to oil accounting and tax problems

Forty-five geologists registered for the recent field trip in western New York, arranged by the Appalachian Geological Society. Here are Dr. I. G. Reimann, Buffalo Museum of Science; Dr. C. A. Hartnagle, New York Geological Survey; Dr. L. C. Snider, president, A.A.P.G., and J. R. Lockett, president, Appalachian Geological Society

Complete Program for Texas Mid-Continent Oil and Gas Meet in Fort Worth

FORT WORTH, Tex.—Completion of the program for the Texas Mid-Continent Oil and Gas Association's annual meeting here October 31 to November 2 by addition of M. W. Fodor, famous foreign correspondent, was announced by E. L. Smith, association president.

Mr. Fodor, who is a graduate mineral engineer and former head of research for a large British steel company, will speak on "Hitler in Quest of Oil." The correspondent has just returned from Europe where he lived through the Nazi invasions of Belgium, the Netherlands and France, fleeing into Spain with the collapse of the French Government. Author of "South of Hitler" and "The World Revolution," Mr. Fodor will tell the inside story of Hitler's change of campaign from England to Rumania and its international implications. He will address the session Friday morning, November 1.

Speaking on oil's part in national preparedness will be Ray L. Dudley, Texas publisher, who will discuss "The Industry Is Ready," at the Thursday afternoon session, October 31. R. B. Anderson, former tax commissioner of Texas, also will speak at the Thursday afternoon session on "If Oil Were Gone." A talk on "Oil's Ad Valorem Taxes," by Homer T. Bouldin, county judge of Shackelford County, will feature the Thursday morning meeting. Mr. Smith will deliver the annual president's address at the same session.

Commemorating the forty-fifth anniversary of the birth of the Texas oil industry, the Fort Worth convention will pay special tribute to pioneer Texas oil men. Spudding in the convention will be the starting of a wildcat oil test in the heart of downtown Fort Worth with a crew of old-timers using the world's first rotary oil-drilling rig, moved over from Corsicana. A bronze plaque to mark the birth of the Texas oil industry in October 1895, at Corsicana, will be presented by J. L. Collins, vice president of the association, to an official representative of Corsicana.

A number of entertainment features are planned. Arranged by R. C. Gee, entertainment chairman, under general direction of W. A. Moncrief, arrangements-committee head, the wildcat jamboree will include a reception given by the Fort Worth bankers Friday night. A dinner dance at the Fort Worth Club will follow, with a big-name band and other entertainment. Friday afternoon the annual handicap golf tournament for the W. B. Hamilton trophy and several dozen other prizes will be played. Saturday, many of the oil men are due to attend the T. C. U.-Baylor University football game.

Business sessions will be devoted to a discussion of problems of the industry, while two outstanding Texas oil men will receive distinguished-service awards from the Texas Mid-Continent association.

Papers of Fundamental Nature to Be Given at Tulsa A.I.M.E. Meeting

Papers of importance to be included in the program of the American Institute of Mining and Metallurgical Engineers at their national fall meeting being held Thursday, Friday and Saturday of this week in Tulsa will include:

"Capillary Behavior in Porous Solids," by M. C. Leverett, of Humble Oil & Refining Co.

"Theoretical Considerations in Well Shooting," by H. H. Evinger and Morris Muskat, of Gulf Research & Development Co.

"Retrograde Condensation," by Emby Kaye, Depco, Inc.

"Temperature Surveys in Oil Wells," by C. V. Millikan, Amerada Petroleum Corp.

"Subsurface Engineering in Recovery Problems," by H. R. Pierce, consulting engineer.

The complete program for the meeting appeared in The Oil and Gas Journal, October 10.

Entertainment for the convention will include a stag buffet to be given by the supply companies at the Tulsa Club, Thursday, October 24, 6:30 p.m. Friday afternoon all those registered, with their wives, will be guests of Frank Phillips at Woolorac ranch where a barbecue dinner will be served in the evening. A special program of entertainment has been arranged for wives of members during the course of the convention.

CALENDAR

October

PETROLEUM DIVISION, A.I.M.E., October 24, 25, and 26, Tulsa.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Shreveport, La., October 25.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

SOCIETY OF AUTOMOTIVE ENGINEERS, national aircraft production meeting and engineering display, Hotel Biltmore, Los Angeles, Calif., October 31-November 2.

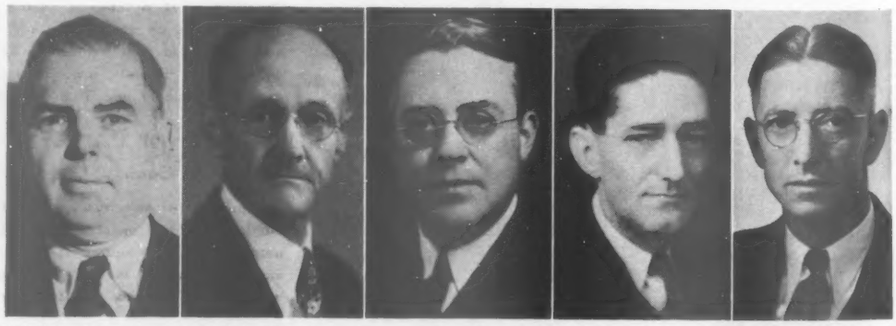
November

CALIFORNIA NATURAL GASOLINE ASSOCIATION, Los Angeles, Calif., November 1.

SOCIETY OF AUTOMOTIVE ENGINEERS, National Fuels and Lubricants Meeting, Mayo Hotel, Tulsa, November 7-8.

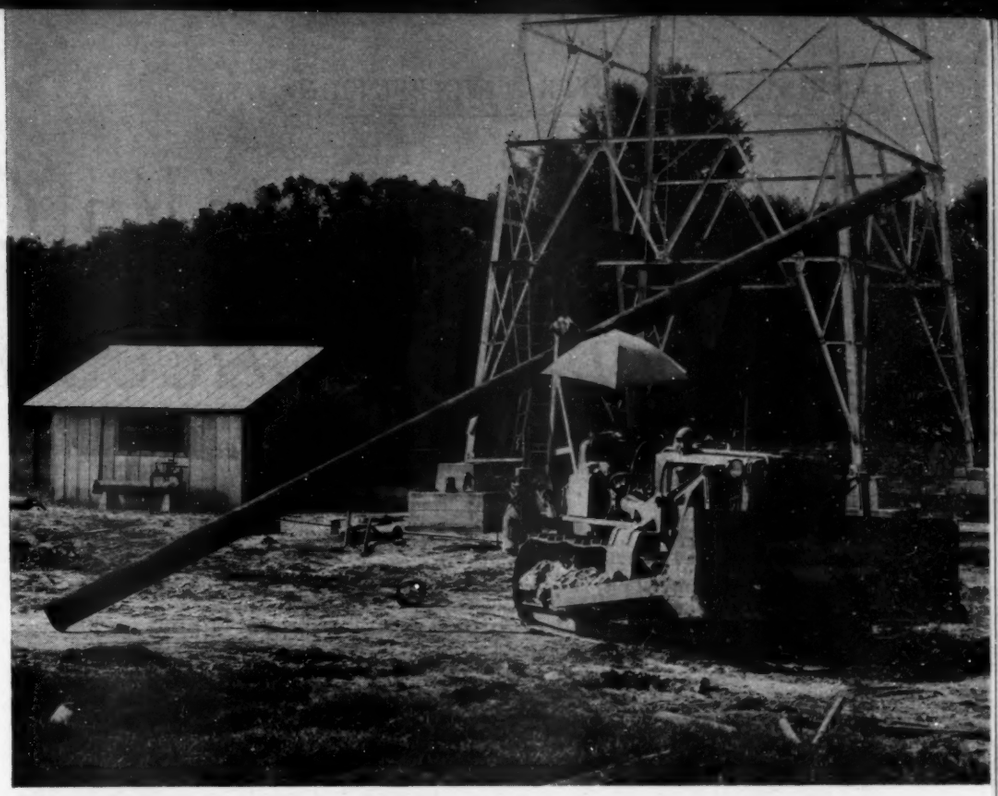
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Los Angeles, Calif., November 7-8.

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.



H. S. KNAPPEN *E. A. STEPHENSON* *D. R. KNOWLTON* *C. A. WARNER* *HAROLD VANCE*

Chairmen for the technical sessions of the A.I.M.E. convention being held in Tulsa this week



In drilling operations the tractor is finding increasing usage for digging mud pits, skidding derricks, clearing roads and well sites and for handling heavy pieces of equipment. Equipped with bulldozers, winches and cranes they also perform many other duties during drilling, as well as in producing operations. This photograph shows a crane-equipped tractor handling pipe on a lease in the Tinsley field of Mississippi

ENGINEERING & OPERATION

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ADVANCEMENTS IN CALIFORNIA DRILLING PRACTICES IN 1940

By A. H. Bell ..... Page 30

California drilling equipment for many years was largely of the same size and capacity, but since discovery of deep fields in the San Joaquin Valley there has been a definite trend toward extra-heavy equipment. These changes in rig designs, drilling practices, boiler plants, cementing practices and other factors making for economical drilling or deeper drilling are discussed.

UNUSUAL TWO-ZONE COMPLETION METHOD USED IN SOUTH TEXAS

By E. C. Will ..... Page 35

Operators have realized for many years the advantages and economies that would result in producing two or more sands through a single well, but in many instances technical difficulties have prevented their realization. At two wells recently completed in a Southwest Texas gas-condensate field this was accomplished by an unusual method of completion and use of auxiliary surface equipment and a special bottom-hole valve arrangement.

APPLICATION OF CATALYTIC DESULFURIZATION PROCESS

By M. W. Conn ..... Page 40

The problem of objectionable sulfur compounds has been widely recognized for many years in the industry, and especially so in view of the high-octane fuels used in aviation and present automobiles. Pilot-plant and commercial operations have shown that catalytic desulfurization markedly improve the TEL response, thereby yielding higher octane fuels with no additional increase in TEL costs. A discussion of the application of the process is given here.

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Advancements in California Drilling Practices in 1940

By A. H. BELL
Continental Oil Co., Los Angeles, Calif.

A.I.M.E. — Presented before Petroleum Division of American Institute of Mining and Metallurgical Engineers, October 17-18, Los Angeles, Calif.

ANY attempt to review the new methods and equipment used in oil-well drilling must necessarily cover a range greater than 1 year. Some ideas are conceived in a given year but do not reach their peak of popular acceptance until 1 or 2 years later. This paper will attempt to outline the developments of major interest that have occurred during the past year without regard to the actual dates of their inception.

For many years drilling equipment has been largely of the same size and capacity, the variation being limited to refinement of design. As improvements developed it was the practice of operators to use their older equipment on shallow drilling projects and to use the new equipment on deeper wells.

Since discovery of the extremely deep fields in the San Joaquin Valley there has been a definite trend toward the development of large and heavy equipment to drill to deepest levels at high speed. This development reached its peak during the past year with the introduction of the 500-lb. steam-pressure superdrilling rig which was designed and built to meet the specifications of Superior Oil Co.

Trends in Drilling

The development of extra-heavy drilling equipment for great depths has naturally been followed by higher depreciation costs on this more expensive equipment, and the operators have been forced to drill at greater speeds even against the handicaps of greater depths in order to hold down overall drilling costs. This trend for the past 10 years is clearly shown in Fig. 1.

It is interesting to note from the graph that although costs per drilling-rig day, have increased tremendously during the past 10 years, the number of feet drilled per day has also increased in face of the greater average depths drilled. The figures used include those from wildcat wells where lost time in coring and testing reduced the average drilling speeds.

Drilling records for speed have been continually broken in spite of increased depth, but on the other hand records for low production allotments under California's proration plan have been steadily broken. California operators are therefore beginning to feel the pinch of diminishing returns from new wells drilled. Mid-Continent operators have been severely curtailed for several years and have been forced to cut drilling costs.

Slim-hole Drilling

One method for lowering costs has been slim-hole drilling and this method has been adapted to 8,000-ft. drilling operations in San Joaquin Valley by Shell Oil Co., Inc. Other operators are being influenced to adopt similar or compromise methods.

Proponents of slim-hole programs recognize the fact that pumping difficulties caused by small casing will be encountered in the future when the wells cease natural flow. They believe that because of wide spacing and heavy curtailment programs, the natural-flow period will be prolonged. Pressure-maintenance possibilities furnish further protection as a means of prolonging flow. In addition many operators feel that it is better to keep solvent today and let the future meet its own problems.

The greatest saving in the slim-hole program is through reduced size of casing, the water string usually being 5 in. in diameter. One operator is experimenting with the use of 4½-in. o.d. tubing for drill pipe and then cementing the tubing in for casing, thus doing away with drill-pipe investment and maintenance. The requirement of the California State Division of Oil and Gas for protection strings cemented over upper oil zones offers some difficulty in planning reduced well costs. Many operators have lately been seeking modification of these rules claiming that cementing and mudding practices have been greatly improved since the rules were laid down in earlier years and that the upper zones can now be effectively protected by mudding and cementing behind one water string.

As a result of the growth in popularity of the slim-hole programs many manufacturers of drilling equipment have recently introduced lightweight, low-cost equipment together with semiportable derricks.

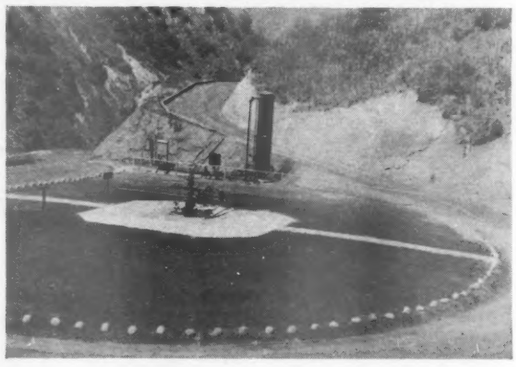
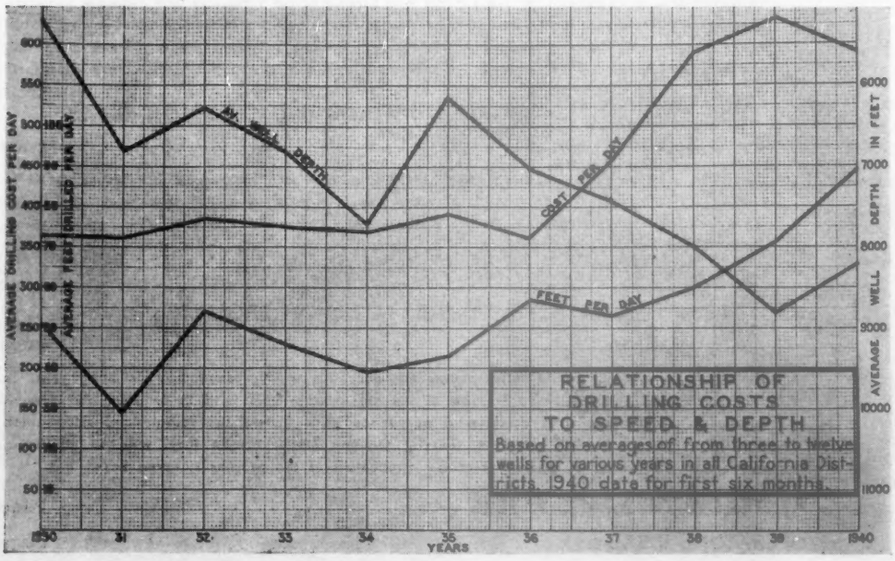


Fig. 1 (below)—Relationship of drilling costs to speed and depth of drilling over the past 10 years. Fig. 2 (right)—Finished well with derrick removed in the San Miguelito field



Another means of reducing drilling costs which has recently gained favor in California is the use of internal-combustion-engine semiportable rigs for depths usually of 7,500 ft. or less. Tool manufacturers have been able to improve their designs through the experience gained in development of similar outfits in fairly large sizes for export for foreign drilling operations. The internal-combustion-engine rig has been brought into more active competition with the steam rig by the incorporation of a hydraulic coupling in the shaft to absorb shock between the engine and the pumps or draw works. The hydraulic coupling transmits a constant torque at reduced speeds when sudden loads are developed and furnishes excellent protection for mud pumps in the event of discharge stoppage. It also assists in synchronizing speeds when pumps are compounded. The hydraulic torque converter, which transmits increasing torque at lower speeds, is ideal for draw-works use as its torque and speed-changing ratio varies automatically through a range of 4 to 1 and therefore a two-speed draw

Fig. 3—Large draw works developed for Superior Oil Co. for deep drilling in California

works of simple design can be used. The only present limitation is that larger sizes have not as yet been developed.

The friction clutch has also been perfected to a point where the jaw clutches can be eliminated in heavy internal-combustion engine-driven drilling rigs for all but the low speeds. The superrig previously referred to is equipped with an air-controlled friction clutch and has demonstrated that this type can be used for very heavy loads.

The arrangement of three engines so that in pulling out of the hole, one of the pump engines can be connected in parallel with the draw-works engine is becoming well established as a standard design by various manufacturers. The former practice of attempting to adapt internal-combustion engines to draw works designed for steam has been supplanted by draw works designed with friction clutches, enclosed chain or gear-box transmission and reduced number of shafts. As a result of these and other improvements, costs have been reduced and portability improved, and it is the opinion of the writer that these units designed for drilling depths and drill-pipe weights to suit various districts will find increasing use in California oil fields.

In any investigation of drilling costs one fact stands out with startling clearness. The cost of drilling equipment is too high but the fault does not lie entirely with the manufacturers. The evolutionary period in drilling-tool design that we have been going through has produced unbelievable results in drilling-efficiency improvement, but it is high time that some standardization of equipment is attempted for the purpose of reducing manufacturing costs. The ink is hardly dry on a catalog before the item becomes obsolete because the next customer has demanded certain changes in design.

Equipment Changes

In a survey of new developments in the way of individual tools or equipment the first item to consider is the drilling derrick in which little change has been made except that the use of the 8-ft. 3-in. high derrick floor has become the rule rather than the exception. Steel substructures for the high floors have become fairly well standardized and portable steel casing racks are coming rapidly into favor.

The practice of moving derricks from well to well (Fig. 2) has become prevalent in new fields where curtailment restrictions and wide spacing insure long flowing life for the wells. This new practice for California has caused a definite trend toward streamlining the rig equipment into portable units that can be readily moved and reassembled. The Shell company and Signal Oil & Gas Co. have each developed systems whereby grillages of steel beams are used to eliminate concrete derrick foundations.

The steam-driven super-draw works previously mentioned as designed for Superior Oil Co. is a fully enclosed three-shaft three-speed outfit with a 32-in. diameter by 58-in. drum having a 62 by 10⅝-in. brake rim (Fig. 3). The old conventional arrangement of chain drives was modified so that the high and intermediate-speed drives are direct from the jack shaft to the drum shaft, with one drive on each end of the shaft. The low speed, which is seldom used, is accomplished through chains up to the line shaft and back to the jack shaft.

Another feature is the 40-in. double-rotor hydromatic brake to handle the heavy loads. This draw works, with its 15 by 14-in. 500-lb. steam engine can handle all but the heaviest loads in high gear with consequent reductions in pulling time. Further experience will be required, however, to determine whether the value of the time saved offsets the greater depreciation and moving costs.

Following the introduction of this large draw works, a newly designed draw works was delivered to Continental Oil Co., equivalent to the old 34-26 draw works but embodying many new design features developed in the super-draw works. It is a four-speed outfit and the jack-shaft-to-line-shaft drive was put outside of the posts, thereby allowing the line and jack shafts to be brought closer to the drum making a more compact unit with greater accessibility to brake rims.

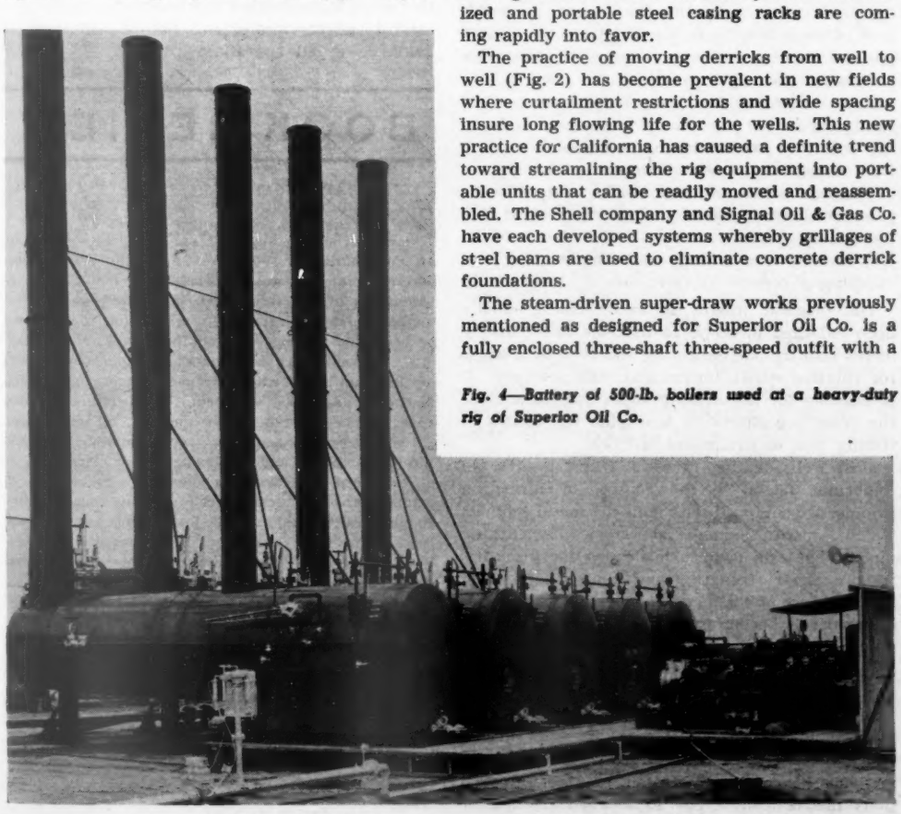


Fig. 4—Battery of 500-lb. boilers used at a heavy-duty rig of Superior Oil Co.

Boiler-Plant Design

Boiler-plant design has undergone little change in the last year and except for the 500-lb. 130-hp. boilers developed for Superior Oil Co. (Fig. 4) the industry has adopted the 350-lb. 125-hp. boilers.

An analysis of the boiler failures which have occurred in the last few years since high pressures have been introduced indicates that bad water is the primary cause. The inability of the locomotive-type boilers now in use to handle large overloads continuously, together with the necessity of standby boilers for use during shutdown for cleaning, may also be attributed to bad water.

In order to overcome this difficulty and to insure an adequate supply of steam at all times, Continental Oil Co. has ordered a new boiler plant for San Joaquin Valley drilling, consisting of marine-type water-tube boilers with evaporator, condenser, and cooling towers so that the plant will run on distilled water. (See Fig. 5)

The plant includes two boilers mounted on skids with overall measurements of 8 by 15 by 13 ft., the two boilers being connected to one steel stack 5 ft. in diameter by 70 ft. high. The feed-water tank, evaporator, condenser, feed and circulating pumps are mounted on two sets of steel skids and are completely piped so that flanged headers are used to connect between the two units. Three portable cooling towers 8 by 25 by 12 ft. are used to cool the condensing water. All exhaust steam from the pumps and engine is returned to the condensers allowing about 10 per cent of the total steam load

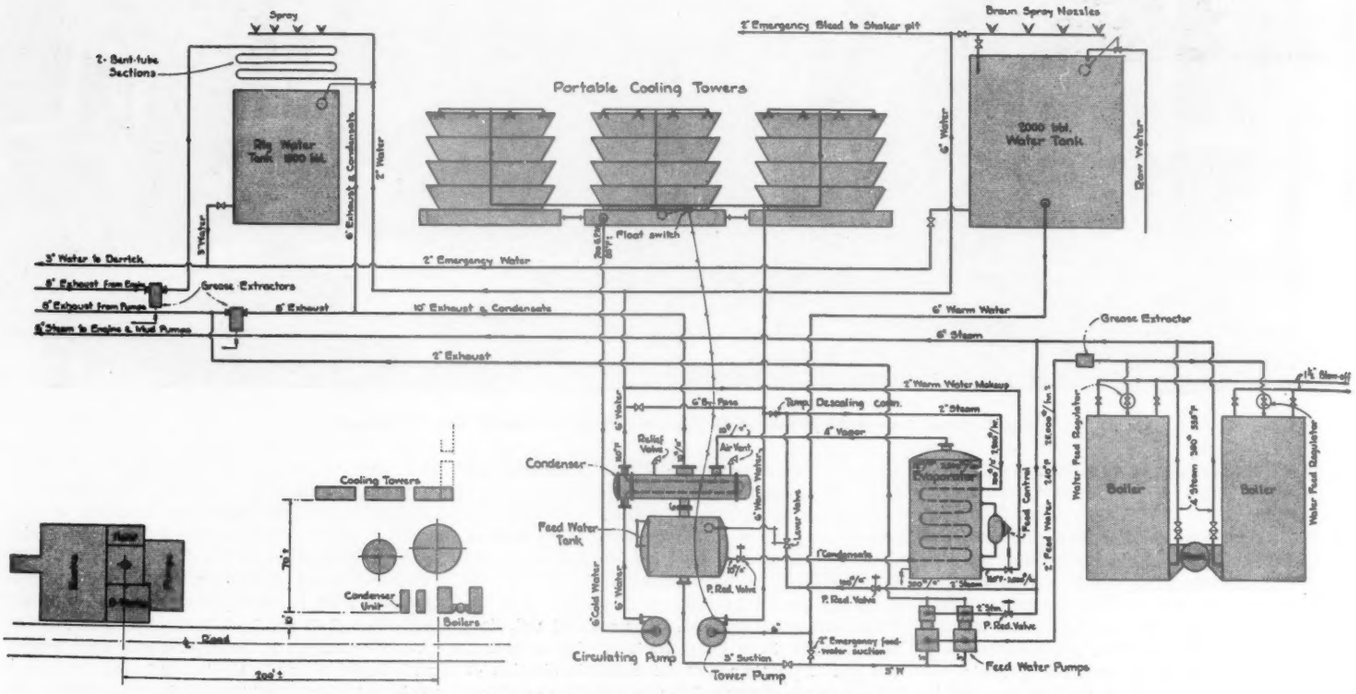


Fig. 5—Flow diagram of marine-type boiler plant

as leakage and waste to be evaporated from raw water.

The two boilers will have a normal capacity of 35,000 lb. of 350-lb. superheated steam per hour with either boiler having capacity to furnish the entire load for short periods. The boilers will run continuously until completion of the well and will only require cleaning and inspection between wells.

Another tool innovation is the replacement of the conventional rotary hook member by a yoke from which the elevator links are suspended. A special adapter or connecter of similar shape to a section of drill pipe and tool joint is attached to the swivel bail and provides a means of supporting the swivel by the regular elevator instead of a hook while drilling. Drill pipe is handled in the usual manner.

The advent of deeper drilling has influenced the design of narrower traveling blocks to give more clearance in the derrick when racking long strings of drill pipe. One type which is a departure from the basic design of traveling and crown blocks has been successfully developed. In this type the conventional bearings have been replaced by a hollow manganese-steel drum which supports the steel sheaves and about which the sheaves revolve on roller bearings. All working parts are interchangeable between the crown and traveling blocks.

New pipe tongs have been developed which can handle drill pipe or drill collars with a range of diameter from 4½ up to 9⅝ in. by simply changing one or two of the hinged jaws, thereby saving time and eliminating the storage of heads for each size of pipe.

The race for supremacy between manufacturers of drill pipe and tool joints still continues. The reduction in joint failures indicates that the drilling industry has definitely benefited by its break away from the old standard tool joint. A new improved standardized joint will no doubt be evolved from the many types of patented joints, threads and variation in upset practice, which will simplify the operator's problem of trying to determine which of the many joints now offered is superior. Since the development of the integral joint, the trend to larger external upset diameters than formerly used and the introduction of new thread designs whereby the joints are made up tight to a shoulder, has caused the number of twistoffs to be greatly reduced. A new item of cost has developed however from the excessive wear on the larger diameter joints and many methods of rebuilding the joints have been tried. A new development this year is the method of replacing the worn joint with a new tool joint flash welded onto the upset of the pipe.

Cementing practice has been gradually improved both as to cementing wagon efficiency and control of slurry characteristics. It is now possible for an operator to specify the weight, per cubic foot, of the slurry for various stages of the cement job and the cementer can comply with reasonable accuracy.

Bulk cementing has been introduced in California during the past year as a means of facilitating fast jobs where large quantities are used. Bulk cement is stored in large bins or hoppers at strategic points and tank trucks equipped with power conveyors for displacing the cement into the mixers are used to convey the cement to the job, thereby eliminating unloading, storing and dumping of cement by extra crews.

The original weight indicator has gradually been enlarged in scope so that the latest instruments also include indicating and recording gages for rotation speed, torque and mud pressure. It is possible for the drilling supervisor to analyze the recording charts to determine the causes of fishing jobs or equipment failures.

Most wells drilling in areas where mud is an important factor in the control of formation trouble, are equipped with compact metal cabinets which constitute small laboratories for testing mud. The tests usually made are for viscosity, weight, shear strength, sand content and fluid loss. The use of chemicals to control these various properties is becoming prevalent and as a result a new job has been created for "mud engineers." As the cost of materials for mud sometimes runs as high as $25,000 for one well it can be seen that scientific mud control is highly important.

To avoid the human element inherent in the visual inspection of cores or ditch samples new methods have been perfected to record formations mechanically. The established method of electrical logging has now been supplemented by services whereby continuous analyses of the circulated mud returns for oil and gas, together with penetration rate are made at the well in trailers equipped as laboratories. Other services make complete analyses of cores for hydrocarbon content and physical characteristics in a trailer laboratory at the well.

A great deal of experimental work has been done to locate gas, water or thief sands in wells by means of temperature surveys. Results of this work indicate that this method is quite successful and services of this nature will soon be available to all operators.

BOOK REVIEW

EXPLORATION GEOPHYSICS, by Dr. J. J. Jakosky. Price $8.

"Exploration Geophysics," an authoritative volume of approximately 800 pages and 430 illustrations, describes fundamental theories, equipment and field techniques of the recognized exploratory geophysical methods and illustrates their application to problems of economic geology. Its author, Dr. J. J. Jakosky, M.E., E.E. and Sc.D. is one of the leading geophysicists of the country. Written for geophysicists, geologists, teachers, physicists, petroleum and civil engineers, supervisors and production men of oil companies, patent attorneys, and the general public, the book offers complete and authoritative information. It differs from most texts on geophysics because of its detailed and practical descriptions of contemporary geophysical techniques and instruments, and in the large number of examples of commercial surveys. Each chapter of "Exploration Geophysics" was prepared in collaboration with geophysicists with extensive experience in their particular techniques, and their excellent cooperation makes the book up to the minute in every detail.

"Exploration Geophysics" may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $8., postage prepaid (extra outside the United States), and a copy will be forwarded promptly upon receipt of check or money order for that sum. Where payment or company purchase order is not provided, the volume will be sent c.o.d. to avoid delay.

Unusual Two-Zone Completion Method Used in South Texas

By E. C. WILL
Gulf Plains Corp., Corpus Christi, Tex.

IN the many fields throughout the country which are capable of commercial production from two or more horizons, operators have realized for many years the advantages and economies which would result in producing two or more sands from a single well. However, there have been in many instances technical difficulties which prevented this plan from being practicable. All of these difficulties have been overcome, however, in two wells recently completed by the Gulf Plains Corp. in the Stratton field, near Agua Dulce, Tex. These two wells are each producing from two separate sands quite efficiently.

The obvious and usual method of completing a well in two sands is to set a tubing-to-casing packer between the two producing horizons and allow the lower sand to produce through the tubing and the upper sand to produce through the annular space between the casing and tubing. This method, however, is not always practical for reasons which will be discussed in greater detail later. This method also has the great disadvantage that, should the production from the upper sand cease for any reason, there is no way to start it flowing again. Production from the lower sand can always be maintained through the tubing by pumping, swabbing, or any of the other usual methods. However, it is impossible to swab, pump or otherwise agitate the fluid in the annular space between the tubing and casing.

Design of Equipment

In all "double barrel" completions an efficient pack-off must be had between the producing horizons; also, the surface equipment and bottom-hole equipment must be so designed as to permit the washing-in of both sands. The usual method employed in two-zone completions is to start both sands flowing before the packer is collapsed and the tubing suspended. In high-pressure areas this presents a considerable hazard and particular care must be taken to provide adequate control.

The Gulf Plains production at Stratton is gas-distillate and is recycled after passing through an absorption plant. The writer is familiar with one double-barrel completion attempted in this field where 2½-in. tubing was run inside of 7-in. o.d. casing. A circulating-type anchor packer was spaced in the tubing string to obtain a seal between the two sets of perforations into the pay sands. Using a ram-type christmas tree to maintain control, the well was washed until both sands started to produce. The packer was then collapsed and the tubing suspended on the rams of the tubing head. The surface pressure from both of the sands was in the neighborhood of 1,900 lb. and the well was to flow into a line carrying 1,200 lb. pressure serving the absorption plant.

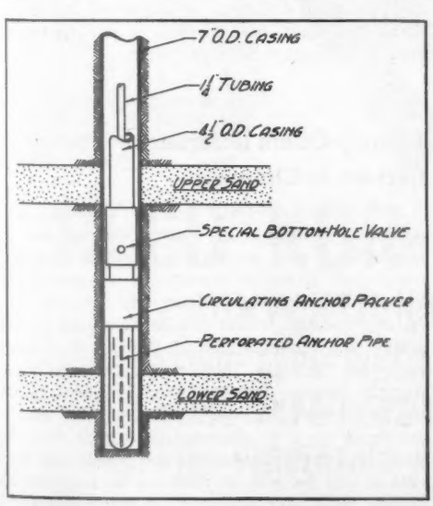


Fig. 1—Schematic drawing of bottom-hole arrangement

Description of Assembly

Both sands produced satisfactorily under these conditions for a short time; however, the upper sand, which was producing through the annular space, soon ceased to produce. This was due to the fact the velocity through the large annular space area was not sufficient to keep the fluid, which dropped out by retrograde condensation, entrained with the gas; thus causing a "loading up" in the casing to such an extent that it was unable to produce against the required line pressure. The lower sand continued to produce through the tubing since the velocity was sufficient to prevent the fluid from settling out.

It was apparent that all the problems would be solved if some method could be devised for withdrawing from the producing strings any fluid which might settle out of the gas. In pursuance of this idea, J. O. Lewis, geologist and consulting engineer, conceived, and has applied for a patent on, an arrangement which would accomplish this result. Mr. Lewis' idea was to run a string of 4½-in. o.d. tubing equipped with a packer to set between the two producing zones, and also equipped with a special valve just above the packer. A string of 1¼-in. tubing would then be run inside the 4½-in. o.d. tubing and attached to the special valve. Then by raising or lowering the 1¼-in. string, the special valve would selectively open ports between the inside of the 1¼-in. tubing and the casing, or between the inside of the 1¼-in. tubing and the 4½-in. o.d. tubing. A schematic drawing of this bottom-hole assembly is illustrated by Fig. 1. A cross-section of Mr. Lewis' valve, as developed by the writer and the Cameron Iron Works engineers, is shown by Fig. 2.

By reference to the drawings it can be seen that production from the lower sand comes from the bottom, up through vertical passageways around the central portion of the valve and thence to the surface through the annular space between the 4½-in. o.d. tubing and the 1¼-in. tubing. Production from the upper sand normally passes through the annular space between the 4½-in. o.d. tubing and the 7-in. casing. The surface equipment (see Fig. 3) consists of a christmas tree utilizing two ram-type tubing control heads, the lower end for suspending and sealing the 4½-in. o.d. tubing and the upper one for handling the 1¼-in. string. On top of the tree is a cylinder which encloses a piston for raising and lowering the 1¼-in. string by means of pressure. The bottom side of the actuating cylinder is connected to a reservoir filled with oil. Connections are made so that pressure from the casing will pass through a regulator, a receiver, and a motor valve controlled by a clock-driven timing device to the space above the oil in the reservoir.

Timing Device

When the timing device opens its valve, pressure will be admitted to the reservoir forcing the oil therein into the lower side of the cylinder and thus raising the 1¼-in. string. Raising of the 1¼-in. string causes the bottom-hole valve to seat against the lower seat. By reference to Fig. 2 is seen that with the valve in this position a port is opened between the 7-in. casing and the 1¼-in. tubing. Thus, any fluid collected in the casing will be kicked out through the 1¼-in. tubing. The well is allowed to produce in this manner for 6 hours, at the end of which time the time controller shuts the valve and allows pressure to bleed off through an orifice in the top of the

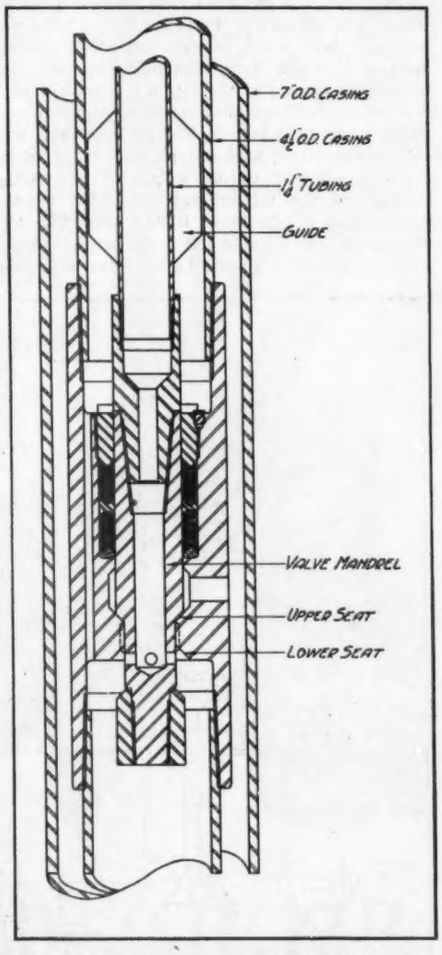


Fig. 2—Cross-section of special bottom-hole valve

oil reservoir. This releases pressure from below the piston in the cylinder and allows the tubing to move downward under its own weight. By reference to Fig. 2 we see that when the tubing has moved downward the upper seat in the bottom-hole valve is closed and the port connects the inside of the 4½-in. tubing with the 1¼-in. tubing and thus any fluid which has collected in the 4½-in. is kicked out through the 1¼-in. string. During both of these cycles the well is, of course, continuing to produce from both zones.

Fig. 4 shows a photograph of the complete surface equipment installed on the first well completed in this manner, the Gulf Plains Corp.'s No. 3 Butts. The 7-in. master valve shown between the two ram-type tubing control heads was eliminated on the second well, No. 1-B Elliff, as indicated by Fig. 3. Since the Lewis valve not only allows these wells to produce satisfactorily but also simplifies the washing operation, it will no doubt be of interest to describe the method used in completing these wells.

After the 7-in. casing was run and cemented, the entire christmas tree, with the exception of the actuating device, was installed. The lower tubing head was equipped with rams to close on 4½-in. o.d. tubing and the upper tubing head was equipped with rams to close on 1¼-in. tubing. Gun perforations were then made into the two producing zones and the 4½-in. o.d. tubing, with the packer and the valve made up at the proper point, was run to bottom. The packer, which was of the circulating anchor type, was collapsed by slacking off part of the weight of the tubing string and the tubing was suspended on the closed rams of the lower tubing head. The 1¼-in. string, with a guide and a special pin connection on bottom to fit the Lewis valve, was then run inside the 4½-in. o.d. tubing until it touched the valve. Measurements were then taken, and the 1¼-in. tubing cut and threaded the proper length.

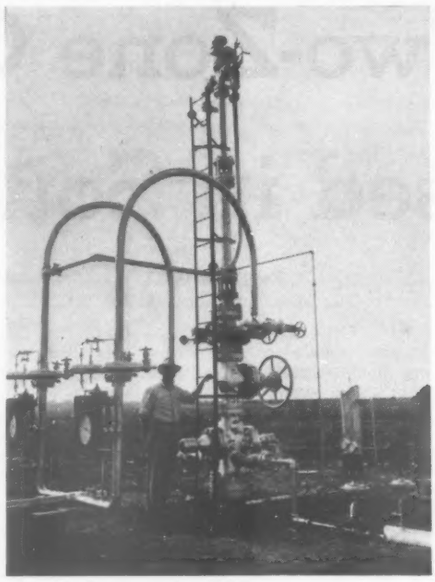


Fig. 4—The author, E. C. Will, standing beside the christmas tree on Gulf Plains Corp.'s No. 3 Butts

In doing this, allowance was made for the normal stretch in the suspended tubing and also for expansion due to increase in temperature after the well was on production. The special connection on the lower end of the 1¼-in. tubing was then made up into the Lewis valve by slacking off and turning to the right. The required tension was then taken in the 1¼-in. so that the rams in the upper tubing head might be closed on the recessed hanger nipple. The landing joint was then backed out and the actuating device installed on the top of the tree after making up the piston rod into the 1¼-in. string. The piston rod is hollow so that fluid produced through the 1¼-in. tubing could pass up through the actuating cylinder and into a line connected to the extreme top of the assembly. Pump pressure was then introduced to the actuating cylinder below the piston to hold the tubing in the upper position and the rams of the upper tubing head then opened. With the tubing in the upward position, the port was opened in the Lewis valve to connect the 1¼-in. tubing to the annular space inside the 7-in. o.d. casing. This allowed the upper sand to be washed in.

Bringing in Lower Sand

After the upper sand had started to produce, pressure was bled off from below the actuating piston and the 1¼-in. tubing allowed to move downward to shift the Lewis valve. With the 1¼-in. tubing in its downward position the port in the valve is opened to connect the inside of this tubing to the inside of the 4½-in. tubing. Thus, the lower sand was washed into production. It is apparent that should it ever become necessary to kill this well, each sand may be killed separately in the same manner.

Two wells have been completed in this manner to date and a third is now in process. The two completed wells have been producing without trouble for some 2⅓ months and it is thought that this method shows considerable promise not only in solving problems of a similar nature in other areas, but also in solving difficulties which at first glance appeared to be entirely unrelated. For example, with this device it will be possible to pump a well from two separate sands selectively. Also, in fields where gas lift is practicable, this device may be employed to great advantage in producing from two separate sands at will by injecting gas through the 1¼-in. tubing string.

Back-pressure potential tests of gas or gas-distillate wells equipped with this device can be calculated in the usual manner with the added advantage of using the 1¼-in. tubing to gage the pressure at the bottom of the hole; thus eliminating the loss in pressure due to friction in the producing strings.

It is the author's belief that many applications will be found for this method of double-completing producing wells, which will allow the investment of a single well to produce returns heretofore only possible with two wells.

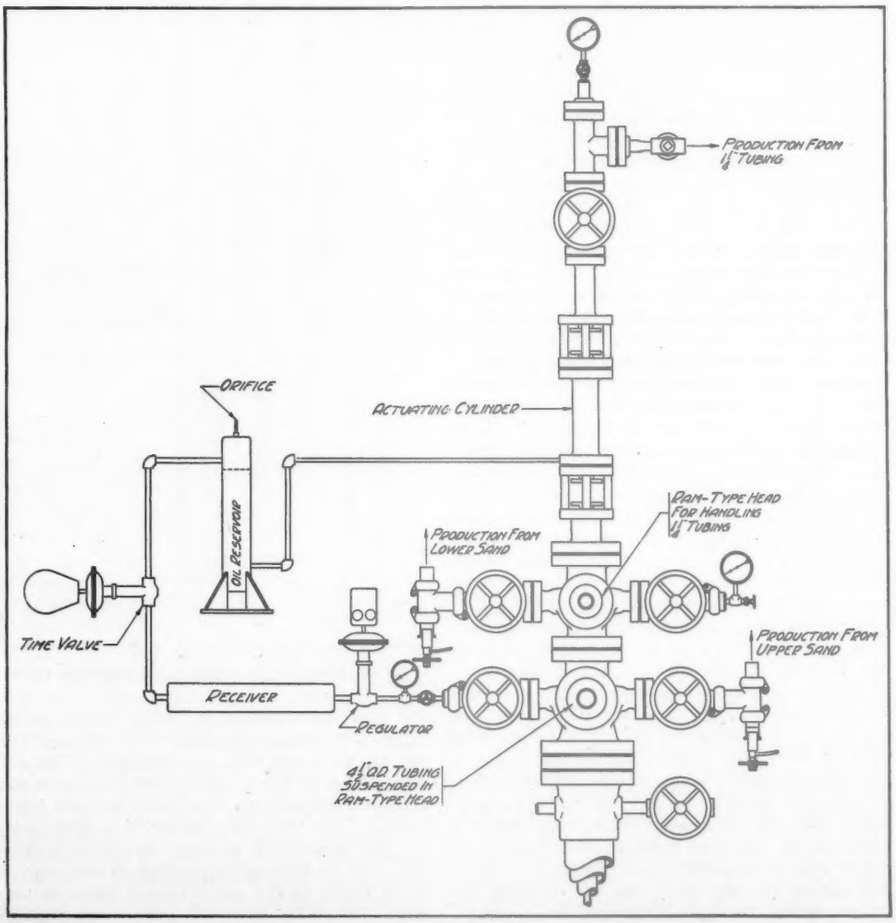


Fig. 3—Christmas tree and auxiliary surface equipment

Library Offers Reference Service to Chemists

The Hooker Scientific Library, operated as a nonprofit institution by Central College, has inaugurated a new service for chemists who lack convenient access to chemical reference works. For a nominal fee the library will send the data on any question which can be answered by reference to a chemical manual, dictionary or index such as Beilstein, Mellor, Thorpe, Ullmann, formula indexes and the like. Inquiries taking too much time for the low fixed rate will be answered at a proportionately higher cost, for which estimates can be rendered in advance. Full details will be sent in response to requests addressed to Hooker Scientific Library, Central College, Fayette, Mo.

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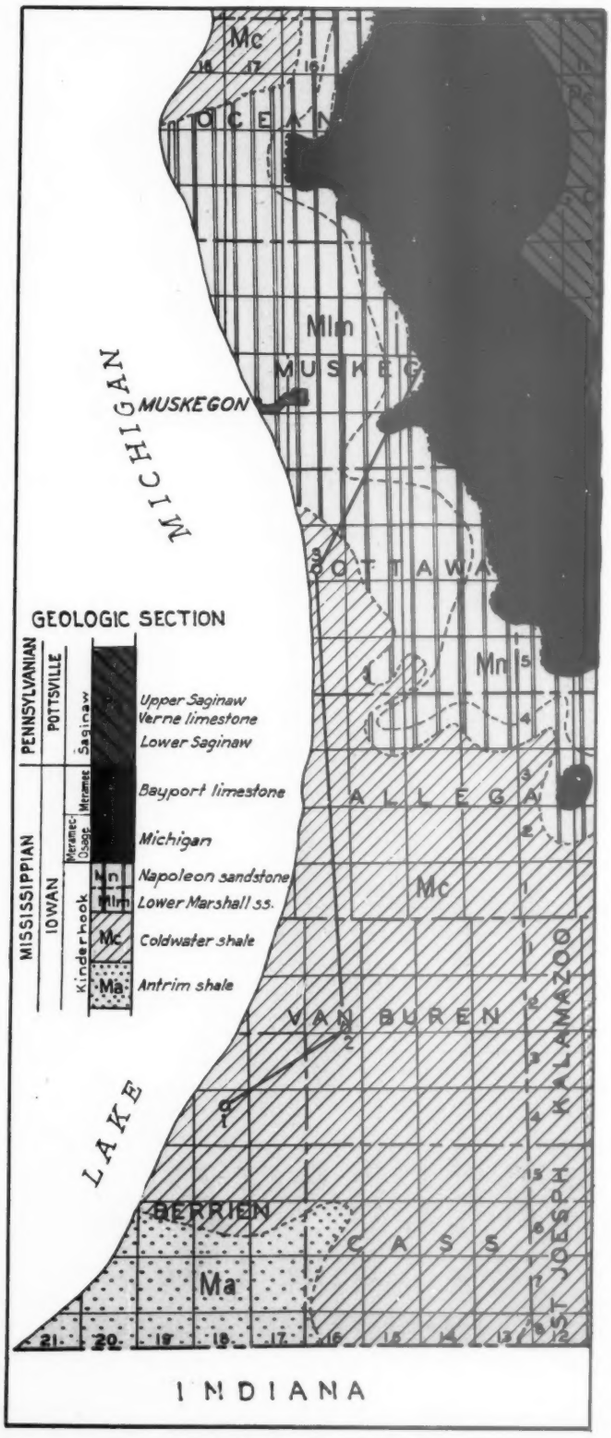
WELL LOGS and FIELD DATA . . . . of Active Oil Areas

Southwestern Michigan

(Compiled by The Oil and Gas Journal)



Geological Map of Southwest Michigan

COMMUNICATIONS: Rail connections: The area is traversed by a number of railroads radiating towards the east and northeast from Chicago, Kalamazoo and Grand Rapids are important rail centers. The principal railroads serving the region are the Michigan Central, Pere Marquette, and Grand Trunk.

Road connections: Michigan is well served by a network of paved roads and the area is readily accessible by road from all parts of the country. The unpaved roads in this section of Michigan are gravelled and well drained.

Boat connections: Muskegon, Grand Haven, St. Joseph, Michigan City and other towns along the lake have harbor facilities and the region is in easy boat communication with St. Lawrence River and Great Lakes ports, as well as with the Mississippi River by way of the Chicago Drainage Canal and the Illinois River.

TOWNS: The area is thickly populated and many of the smaller towns are summer resorts with good hotel accommodations. Principal towns (with population in thousands) are Grand Rapids, 185; Muskegon, 65; Kalamazoo, 60; Grand Haven, 10; and St. Joseph, 10.

DEVELOPMENT: The first field to be discovered in the area was Muskegon, which was brought in in 1927. The field has produced 6,700,000 bbl., mainly from the Dundee limestone, or about 2,500 bbl. per acre. The next field to be brought in was Hart, in Oceana County, which produced only 120,000 bbl. from the Dundee. Beginning in 1936, the play extended south into Allegan County, where a number of fields were brought in, including Salem, New Salem, Monterey, and Overisel. In 1938 Bloomingdale and Mill Lake were discovered in Van Buren County, and in the fall of 1938 the Walker field on the western edge of Grand Rapids was found. This field led Michigan in production during 1939.

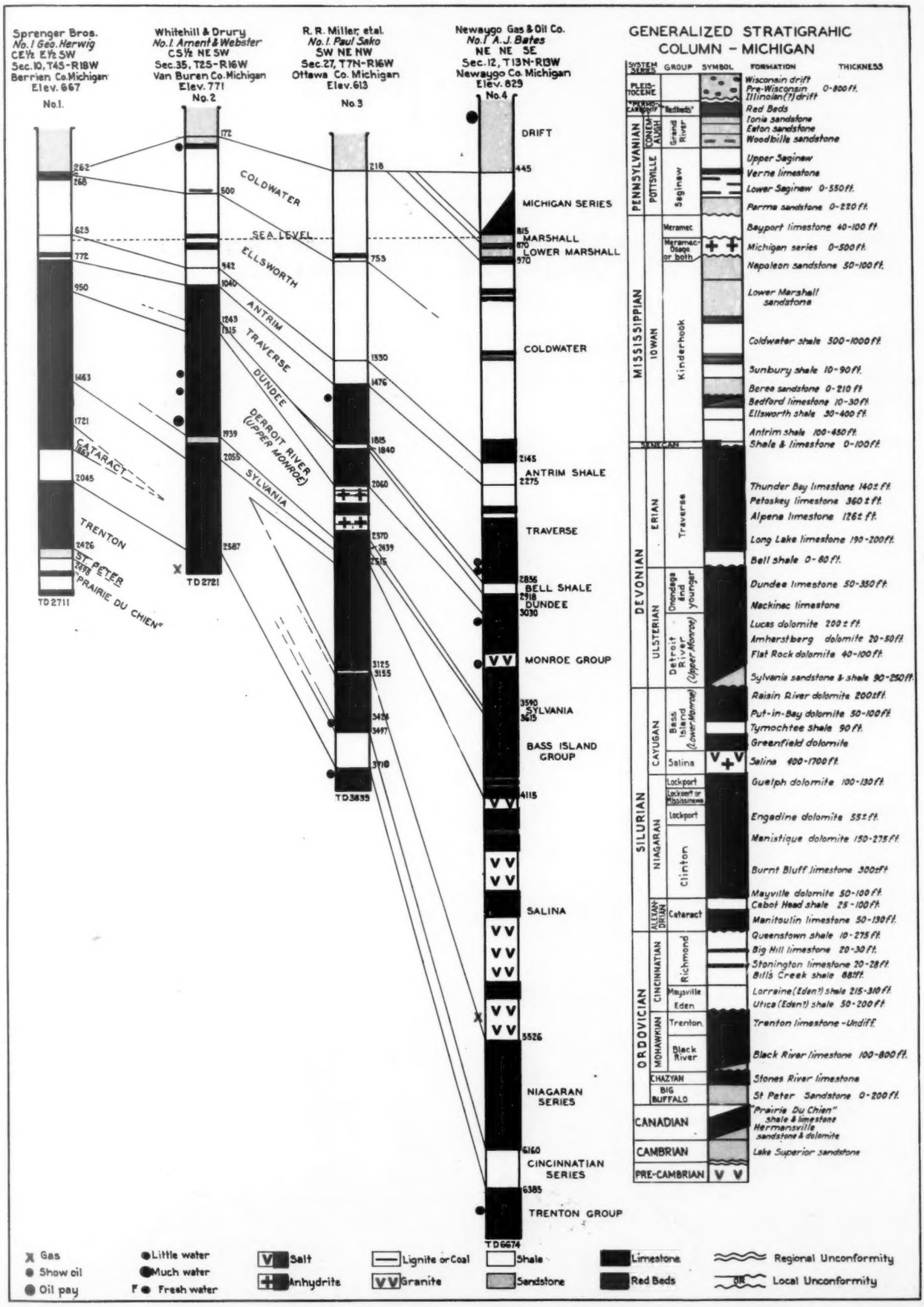
GEOLOGY: Owing to the fact that the area is covered by a thick blanket of glacial drift, outcrops are few in number. Surface geology is, therefore, rarely used in the working out of structure, although surface geology played an important part in the discovery of the Walker field. Because of the variable thickness and heterogonous nature of the drift, geophysical prospecting has also met with little success. Locations are made largely on the basis of subsurface geology and wildcatting is probably more than ordinarily hazardous.

The area is underlain by rocks of Mississippian age and forms the southwest flank of the Michigan basin, which dips toward the center of the southern peninsula. The subsidence which resulted in the formation of the basin gave rise to a number of subparallel northwest-southeast anticlinal ridges on which production is found.

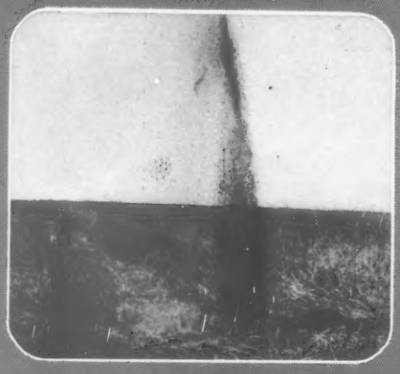
The principal pay in this part of Michigan is the Traverse limestone of Devonian age, although the Dundee and Monroe, which produce elsewhere in the state, have not been adequately tested.

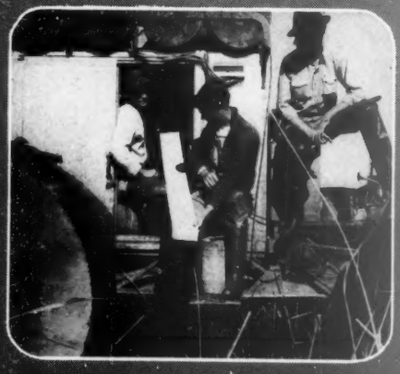
POTENTIALITIES: Although there has been a great deal of prospecting in the area, it may be considered as having excellent chances of developing much additional production. The known structural trends have not been fully prospected and wildcatting is bringing out additional information which will lead to the discovery of additional trends.

Production from the Traverse runs ordinarily between 2,500 and 3,500 bbl. per acre, with local richer spots. Declines are rapid and pools drop off quickly from their peaks. The Traverse does not settle down into a long period of steady production and, therefore, wells are usually short-lived.


Sprenger Bros.
No. 1 Geo. Herwig
CE½ E½ SW
Sec. 10, T4S-R18W
Berrien Co. Michigan
Elev. 667
No. 1.
Whitehill & Drury
No. 1. Arment & Webster
CS½ NE SW
Sec. 35, T2S-R16W
Van Buren Co. Michigan
Elev. 771
No. 2
R. R. Miller, etal.
No. 1. Paul Sako
SW NE NW
Sec. 27, T7N-R16W
Ottawa Co. Michigan
Elev. 613
No. 3
Newaygo Gas & Oil Co.
No. 1 A. J. Bates
NE NE SE
Sec. 12, T13N-R13W
Newaygo Co. Michigan
Elev. 829
No. 4
DRIFT
COLDWATER
SEA LEVEL
ELLSWORTH
ANTRIM
TRAVERSE
DUNDEE
DETROIT RIVER (UPPER MONROE)
SYLVANIA
CATARACT
TRENTON
ST. PETER
"PRAIRIE DU CHIEN"
MICHIGAN SERIES
MARSHALL
LOWER MARSHALL
COLDWATER
ANTRIM SHALE
TRAVERSE
BELL SHALE
DUNDEE
MONROE GROUP
SYLVANIA
BASS ISLAND GROUP
SALINA
NIAGARAN SERIES
CINCINNATIAN SERIES
TRENTON GROUP
TD 2711
TD 2721
TD 3635
TD 6674
GENERALIZED STRATIGRAHIC COLUMN – MICHIGAN
SYSTEM SERIES
GROUP
SYMBOL
FORMATION
THICKNESS
PLEISTOCENE
Wisconsin drift
Pre-Wisconsin Illinoian(?) drift 0-800 ft.
PENNSYLVANIAN
CONEMAUGH
Red Beds
Ionia sandstone
Eaton sandstone
Woodbille sandstone
POTTSVILLE
Grand River
Upper Saginaw
Verne limestone
Lower Saginaw 0-550 ft.
Saginaw
Parma sandstone 0-220 ft.
MISSISSIPPIAN
Meramec
Bayport limestone 40-100 ft.
Meramec-Osage or both
Michigan series 0-500 ft.
Napoleon sandstone 50-100 ft.
IOWAN
Kinderhook
Lower Marshall sandstone
Coldwater shale 300-1000 ft.
Sunbury shale 10-90 ft.
Berea sandstone 0-210 ft
Bedford limestone 10-30 ft.
Ellsworth shale 30-400 ft.
Antrim shale 100-450 ft.
SENECAN
Shale & limestone 0-100 ft.
DEVONIAN
ERIAN
Traverse
Thunder Bay limestone 140± ft.
Petoskey limestone 360± ft.
Alpena limestone 126± ft.
Long Lake limestone 190-200 ft.
Bell shale 0-80 ft.
ULSTERIAN
Onondaga and younger
Dundee limestone 50-350 ft.
Mackinac limestone
Lucas dolomite 200± ft.
Detroit River (Upper Monroe)
Amherstberg dolomite 20-50 ft.
Flat Rock dolomite 40-100 ft.
Sylvania sandstone & shale 90-250 ft.
Raisin River dolomite 200± ft.
CAYUGAN
Bass Island (Lower Monroe)
Put-in-Bay dolomite 50-100 ft.
Tymochtee shale 90 ft.
Greenfield dolomite
Salina
Salina 400-1700 ft.
SILURIAN
NIAGARAN
Lockport
Guelph dolomite 100-130 ft.
Lockport or Mississinewa
Lockport
Engadine dolomite 55± ft.
Clinton
Manistique dolomite 150-275 ft.
Burnt Bluff limestone 300± ft.
Mayville dolomite 50-100 ft.
ALEXANDRIAN
Cataract
Cabot Head shale 25-100 ft.
Manitoulin limestone 50-130 ft.
ORDOVICIAN
CINCINNATIAN
Richmond
Queenstown shale 10-275 ft.
Big Hill limestone 20-30 ft.
Stonington limestone 20-28 ft.
Bills Creek shale 88 ft.
Maysville Eden
Lorraine (Eden?) shale 215-310 ft.
Utica (Eden?) shale 50-200 ft.
MOHAWKIAN
Trenton
Trenton limestone - Undiff.
Black River
Black River limestone 100-800 ft.
CHAZYAN
Stones River limestone
BIG BUFFALO
St Peter Sandstone 0-200 ft.
CANADIAN
"Prairie Du Chien" shale & limestone
Hermansville sandstone & dolomite
CAMBRIAN
Lake Superior sandstone
PRE-CAMBRIAN
Gas
Show oil
Oil pay
Little water
Much water
Fresh water
Salt
Anhydrite
Lignite or Coal
Granite
Shale
Sandstone
Limestone
Red Beds
Regional Unconformity
Local Unconformity

FINDING TOMORROW'S OILFIELDS TODAY





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A. I. M. E. ABSTRACTS

Papers presented at fall meeting at Los Angeles, Calif., October 17-18, 1940.

Notes on Estimating and Valuing Oil Reserves

PAUL PAINE and H. K. ARMSTRONG

IN the valuation of developed oil properties, the most important considerations are the estimates of oil reserves, of costs, and of the resulting future profits. Some of the factors making up these considerations are more commonly emphasized than others; some are often minimized or entirely neglected.

Using the records of an old producing property, a study is made of it by a number of valuations, at successive periods; in these the only information considered is that which would have been available at each of these times. Consistency is further sought by utilizing only such technical methods as would have been in practice at these times. The valuations are compared with what has subsequently happened at the property, and the effects of the various factors are reviewed. The engineer's responsibilities in presenting these uncertainties in his reports are pointed out. The misuse of discount factors, either by reason of misinterpretation or through conveying an unwarranted appearance of precision, is discussed.

•

The Characteristics and Application of an Oil-Base Mud

HORACE W. HINDRY

THE purpose of this paper is to present data on the fundamental design of the mud, the ingredients used and their specifications; the effect of ingredient concentration on physical properties; the selection of the proper mud; the facilities needed for handling the mud, and a general discussion on drilling with oil-base mud. In view of the early stage of development of oil-base mud, the great number of variables, and the infinite possible combinations of these variables which in turn require extensive laboratory study, there are certain irregularities and omissions in the data presented. However, it is believed that sufficient data are at hand to permit a fairly complete analysis of the characteristics of oil-base muds.

•

The Effect of Curtailment on Local Taxes

WALTER S. CLUTE and MILTON W. LEWIS

DRASTIC curtailment of oil and gas wells has brought with it a new relationship of local taxes whereby the tax levies are materially increased with respect to the lowered production and earnings of the properties. The reasons for this are twofold: (1) The remaining high capacity to produce after each year's curtailed production leaves a great amount of oil reserves to be assessed over and over again, and (2) the normal producing period is extended from 15 to more nearly 25 years, adding additional period for assessments; and at the same time costs of producing as well as taxes are increased.

Computations have been made covering the probable assessments upon sizable wells through their future lives, as compared with open-flow wells of the same initial capacities. It is found that representative wells may pay in total more than twice the taxes that would have been levied had the wells been produced at open-flow rates. The factors used to provide for curtailment in various assessing methods have been analyzed and are here demonstrated by a new presentation of a series of present-worth-decline curves, with a view of ascertaining whether present methods give full recognition to curtailed values. Direct engineering appraisals were prepared for future years, and comparison shows that present assessment methods usually result in reasonable annual values under curtailed conditions.

However, neither of the latter methods approaches the total lower assessments of wells formerly producing at open-flow rates when valued on that basis. Hence it is found that total valuations on sizable curtailed wells increase the assessments in a manner which appears not only to place a penalty on curtailment, but also to impose an extra tax burden on the oil industry.

Any relief from this lies in the best recognition of these circumstances that can be granted by the taxing authorities so that no error be made toward the higher side of the valuations found for tax purposes.

•

Operation of the Gas Law in West Montebello Field

E. HUGUENIN and HARRY P. STOLZ

RESULTS obtained by the injunction suit may be summarized as follows:

First and most important: Conservation of gas energy has led to a longer flowing life of the individual wells and therefore the field as a whole, increasing the ultimate recovery of oil.

Second: A saving to the operators in production costs and increasing their ultimate revenue thereby. If the total field blow had been allowed to continue at 100,000 M.c.f. per day, valued at 4 cents per 1,000 cu. ft., the value of the gas thus blown would have approximated $600 per well per month, or considerably more than the monthly operating cost of the average well.

Third: The saving to the ultimate consumer—the people of the State of California—some of their irreplaceable natural resources, great quantities of natural gas, the value of which would be in hundreds of thousands of dollars.

Fourth: The education of the majority of operators at West Montebello oil field as to the benefits derived by the conservation of the gas energy, whose cooperation was first forced, but who now value these benefits.

Fifth: This action upon the part of the state and the cooperation obtained between the court, state enforcement agencies, and the operators should point the way to a solution in other fields that may become potential gas wasters. Such a solution should be reached by the voluntary efforts of the operators concerned, without the need of court action.

•

Experiments on Flow of Heterogeneous Fluids Through Consolidated Sand

JOHN A. PUTNAM (University of California)

AN experimental investigation of the flow of natural-gas - crude-oil mixtures through consolidated sandstone cores is described. A description of the apparatus and methods employed in the experiments is also included. An empirical relation which expresses the response of total fluid flux to pressure gradient is developed from the experimental data and compared with the results of other investigators. The empirical relation is based on two parameters, which are the threshold gradient and the slope of the total flux-pressure gradient curves. These parameters are related to the properties of the fluid system and porous medium. A flow method for determining the viscosity of saturated liquids at elevated pressures is indicated.

•

Application of Core Analyses To Production Methods

JAMES A. LEWIS (Core Laboratories, Inc.)

THE basic considerations required in judging the effects of water movement into an oil reservoir are: (1) The time of flooding; (2) the structure of the rock; (3) the shape of the area being flooded; (4) the point at which water is admitted; (5) the height (which governs the pressure) of the column of water obtaining admittance; (6) the duration of the water supply; and (7) the fluid characteristics and distribution. It is gratifying that today we can, as a result of recent developments, intelligently measure, evaluate and apply these criteria, all but one of which J. F. Carll recognized in 1880, as being the basis for increased recovery through water drive. With our present knowledge of oil-reservoir mechanics, it is possible, in keeping with judicious application of these basic principles, to develop and produce an oil field today so that a greater recovery of the original oil content will be obtained at less cost per barrel. The first essential to successful operation is a working knowledge of the sand and fluid characteristics.

•

Development and Application of Subsurface Pressure Data in Kettleman Hills

E. W. McALLASTER (Kettleman North Dome Association)

THE author discusses the development and use of subsurface pressure data, giving examples of their application to production problems in Kettleman Hills. The latter part of the paper is taken up with a discussion of past production practices in Kettleman Hills and the harmful effects of nonuniform rates of withdrawal of oil and gas upon the reservoir pressures as determined from subsurface pressure data.

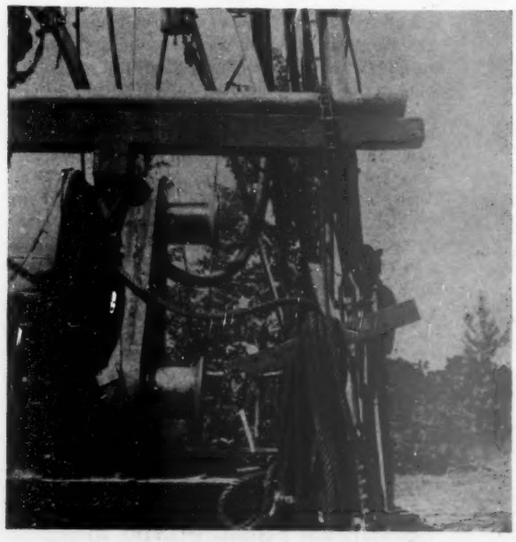
Operating Ideas

Storage-Pit Mud Screened on Use

Mud-pump trouble resulting from clogged suction valves when taking mud from the storage pit is avoided by one contractor who departs from the usual method of pumping or jetting mud from storage directly into the suction pit of the pumps. Instead of running a short inverted U-pipe over the dike of the storage pit, he carries the line to the mud screen and the jetted stream is then run over the vibrating screen. All lumps are thereby either broken down or rejected with the cuttings, instead of being allowed to find their way into the pump. The line from the storage pit to screen is carried high enough overhead to clear other lines so as to require little power to make the transfer.

Timber Shock Absorber for Rig Holddown

Where the draw works is held down by chains or links connected to eyes in the derrick foundations and carried over a channel, I-beam or other extension of the draw-works frame, direct connection



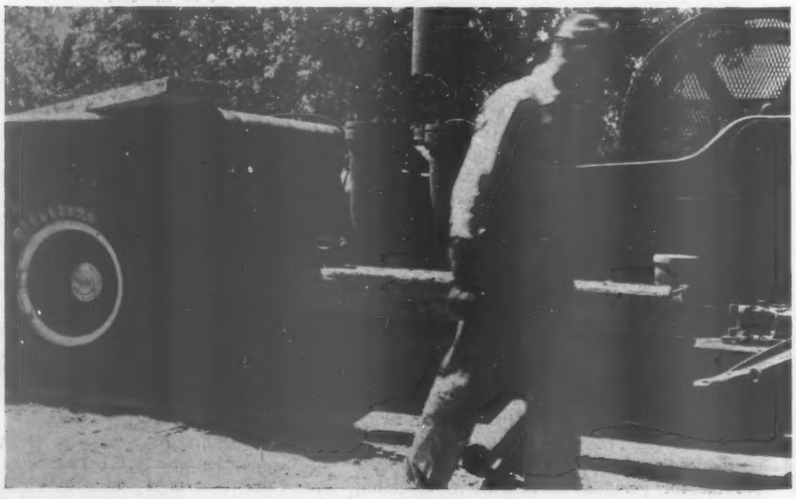
transmits all shocks from operating directly to the mechanism, imposing unnecessary strain on shafts, bearings and chains. One operator, working in the East Texas field, interposes two short transverse blocks and a long 6 by 8 beam between draw works and the joint of drill stem used to extend out to the hitches to the foundation eyes. The resiliency of the wood absorbs vibration and shock, without permitting the unit to shift under heavier or prolonged load. Much smoother operation is found to follow use of blocking instead of hitching the chains direct.

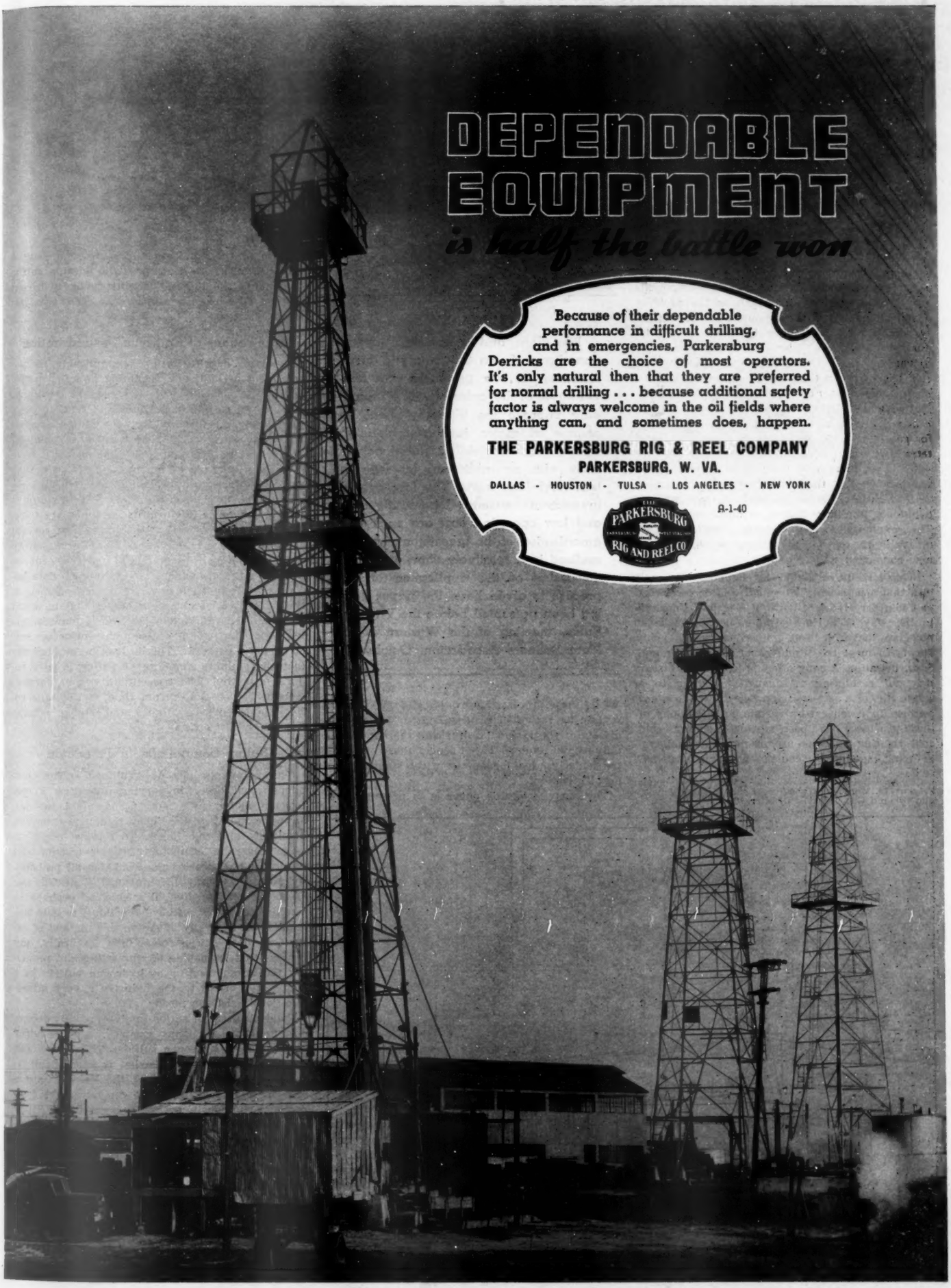
Welded "Horseshoe" Hitch for Deadline

Where new line, to replace that damaged or drum-worn during drilling, must be fed on through the deadline, any crimp or deformation of the wire at this point introduces a hazard as it comes into service and must withstand drilling loads. A heavy "horseshoe," built up by a welder from strap material, easily holds open the loop on the deadline, and distributes the load properly throughout its strands. The shoe, passed under the eye cast in derrick foundation, has for backbone a strip of 3 by ⅝-in. flat steel, bent into shape of a large horseshoe. On each edge of the curve is welded a piece of half-round steel, heavy enough to form a groove around the base piece just large enough to accommodate the wire line. When welded, this unit is stiff enough to assure proper line form, yet may be turned and slipped from the steel eye in the concrete base.

Truck Holds Base Down While Raising Derrick

When raising an 86-ft. derrick on a portable rig, trouble is often experienced with the back end of the base being raised from the ground. To prevent this, one Kansas crew uses sills laid on top of the framing skid and under the truck frame and then chains the framing skid and truck frame together.

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Application of Catalytic Desulfurization Process

By M. W. CONN
Perco, Inc.

SUMMARY

Pilot-plant and commercial operations have shown that catalytic desulfurization at low pressures and temperatures of the order of 750° F. markedly improve the tetraethyl lead response of motor fuel-base blending stocks, thereby yielding higher octane fuels with no additional increase in tetraethyl lead costs. The low capital investment, unusually long catalyst life and low operating cost are such that amortization of the investment may be realized in a relatively short period. A discussion of the application of the process is given here, the paper having been presented before the Wichita, Kans., meeting of the Western Petroleum Refiners Association, October 4.

IT is unfortunate that petroleum oils carry with them certain objectionable impurities. With very few exceptions, sulfur and its compounds are quite deleterious. Inasmuch as the problem of objectionable sulfur compounds has been widely recognized almost since inception of the industry it is little wonder that it has given rise to various treating processes, and especially has this been true in the recent months of increasing octane numbers on the highly refined automotive and aviation fuels.

After establishing the octane specifications for gasolines, wide deviations in their rating and tetraethyl lead susceptibilities were observed on some straightrun gasolines. Schulze and Buell[1] have shown that this rather anomalous behavior with respect to tetraethyl lead response was attributable, in a large degree, to sulfur compounds. This explanation has received verification by others in the petroleum-refining industry and is now concurred with generally.

Being forced to abandon the commonly accepted idea that a petroleum oil which was doctor sweet and noncorrosive left nothing else to be desired in the way of sulfur refining, petroleum technologists have devised numerous and devious means to meet the problems of sweetening and desulfurization. Among other processes, acid treating and rerunning and caustic washing in a single step or a series of steps are known to every refiner. In recent years certain modifications of these processes have been advanced, such as cold acid treating and the use of mercaptan-solvent-inducing agents in caustic washing systems. While these processes are quite effective up to a certain degree of desulfurization, the deleterious effects of the residual sulfur and the expense of only partial removal do not render these processes particularly advantageous from the standpoint of desulfurization.

The purpose of this paper is to present a discussion of the application of a process using a catalytic means to decompose the organic sulfur compounds in light-oil distillates to hydrogen sulfide. This process is known as Perco catalytic desulfurization.

[1] W. A. Schulze and A. E. Buell, Sulfur Compounds Present in Motor Fuels Affect Lead Responsiveness, The Oil and Gas Journal, October 10, 1935.

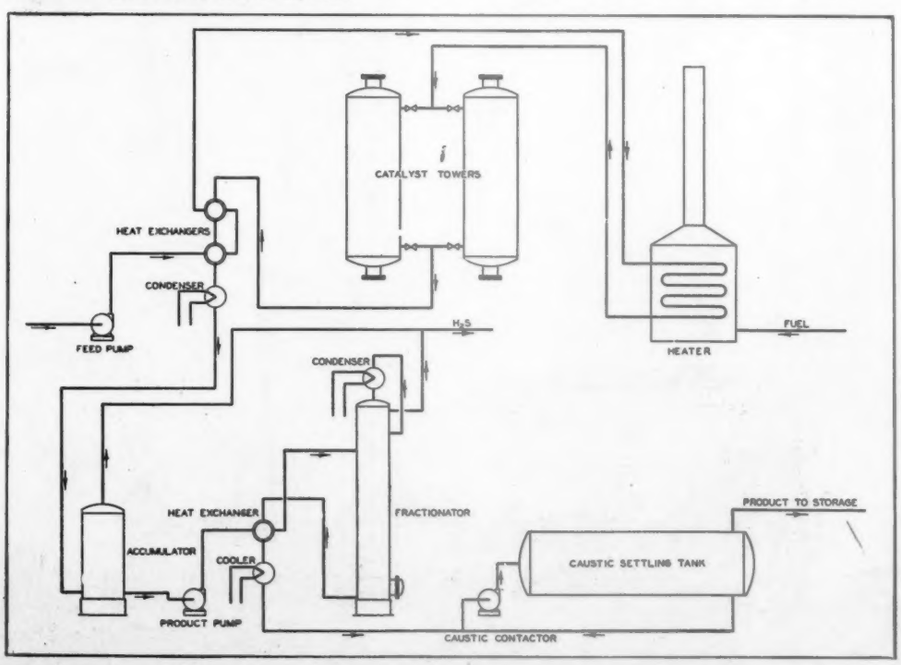

Fig. 1—Perco catalytic desulfurization process

Applications of Catalytic Desulfurization

Catalytic desulfurization is applicable to the treatment of light oils, including liquefied petroleum gases, casing-head and natural gasolines, straightrun gasolines, polymer and cracked gasolines, certain reforming stocks and specification naphthas, such as Stoddard solvent, painters' naphthas, etc. Many specification agencies have for a long time placed much emphasis on the 0.1 per cent total sulfur specification for finished automotive fuels. From the viewpoint of automotive performance, high-sulfur gasolines are tolerable and many specifications have been revised to allow for the manufacture of motor gasolines with a total sulfur content of 0.2 per cent or more. On the other hand, the numerous data before and after desulfurization that are shown in the tables are convincing evidence that in many instances it is uneconomical, from a manufacturing viewpoint, to tolerate a total sulfur content of even 0.1 per cent. This is true because of the fact that minute amounts of sulfur greatly reduce tetraethyl lead susceptibility, and particularly it is true since from time to time the refiner is faced with higher and higher octane-number specifications.

Sulfur Compounds in Petroleum

The known groups of combined sulfur compounds that occur in varying quantities in petroleum oils include mercaptans, alkyl sulfides, aromatic sulfides, disulfides, thiophanes, carbon disulfides, and thiophenes. To remove these various classes of compounds from petroleum oils purely by chemical means would, in all probability, require as many different operations. The use of solvents as a physical means, or perhaps in combination with chemical reactions, to date has resulted in no really advantageous method of removing these sulfur compounds. Naturally, any process that is capable of converting and removing the organic sulfur as hydrogen sulfide in a single step offers to the industry a very attractive desulfurization means.

Catalytic desulfurization catalysts readily decompose the first four named groups of organic sulfur compounds to hydrogen sulfide. Thiophanes and carbon disulfide are somewhat more difficult to decompose, while thiophenes, the least objectionable with respect to effect on tetraethyl lead response and usually present to a greater extent in cracked and polymer gasolines than in straightrun gasolines, are not appreciably removed. Since thiophenes constitute the only important class of sulfur compounds not removed by this process, the total sulfur reduction under optimum conditions depends on the quantity of thiophenes originally present in the oil. Generally speaking, the normal sulfur removal by catalytic desulfurization is upwards of 85 per cent for uncracked materials, while cracked and polymer gasolines yield total reductions of the order of 50 per cent. Refinery

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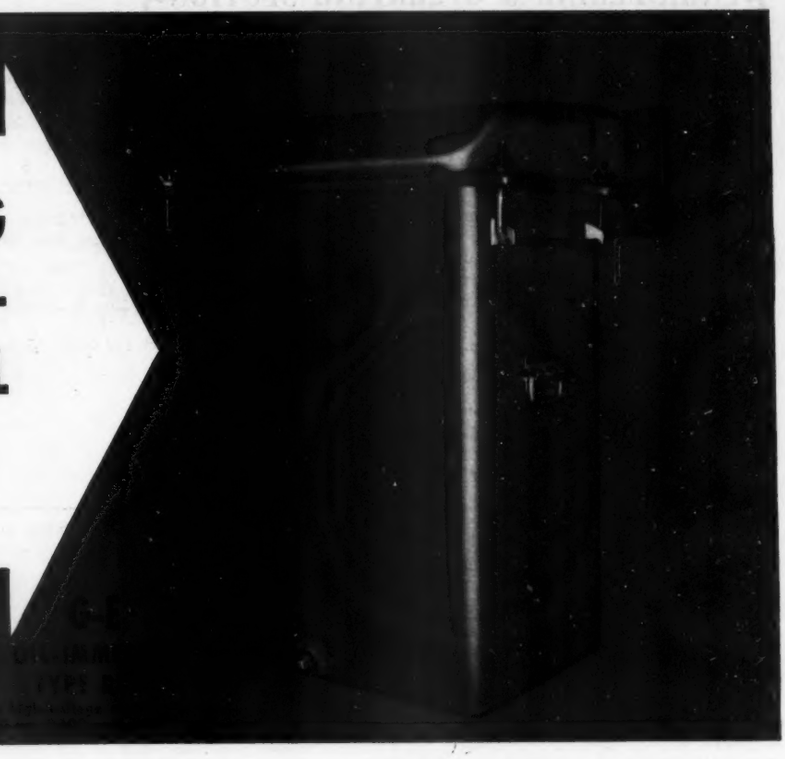

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All operating parts, including overload relays, are immersed in oil. Corrosive fumes cannot get at them. Cast-iron head, mentioned above, resists corrosive moisture that may condense on it. Case is copper-bearing steel painted with aluminum paint. Contactor is of husky construction and contacts are heavy copper.

EASE OF INSPECTION

The operating devices are easily accessible, particularly when the optional tank-lowering mechanism is used. This improved mechanism enables one man to lower and raise tank evenly and accurately with very little effort.

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Thermal overload relays, specially designed for operation in oil, protect motor against damage from excessive overloads. They are mounted with contacts at bottom or side to prevent possibility of oil sludge interfering with their action. Undervoltage protection safeguards machines and operators from danger of unexpected restarting after a power interruption. Control and power wiring are widely separated and securely attached to provide maximum protection to operators.

FROM every angle—installation, inspection, maintenance, protection—this G-E oil-immersed starter is *the* motor control for high-voltage service in the corrosive atmospheres of refineries and chemical plants.

Developed to meet specific operating requirements, it is another example of how G-E engineers take the ideas and suggestions of users and incorporate them into improved products such as you expect of a progressive manufacturer.

As you consider its various features, remember that this starter is but one of a line of oil-immersed control that is as complete as you will find anywhere. General Electric is in a position to furnish low-voltage types, as well as high-voltage units with either high or moderate interrupting capacity. This control can also be furnished with contactor and terminals six inches under oil to make it suitable for installation in hazardous gas locations.

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▲ The cast-iron head design enables you to wire from top, bottom, or either side

When in service, this operating mechanism is completely oil immersed

The improved tank-lowering mechanism facilitates inspection

GENERAL ELECTRIC

vapor-recovery gasolines and reformer stocks will ordinarily fall between cracked and uncracked gasolines in the per cent of total sulfur removable.

Description of System

The process design of a catalytic desulfurization unit comprises a simple and inexpensive construction. From the flow plan given in Fig. 1 it is to be noted that the raw feed is picked up by a charge pump and charged to heat exchangers, thence to a tubular heater in which complete vaporization and superheating to about 750° F. is obtained. The superheated vapors next pass in downward flow through one of the catalyst towers where the organic sulfur is decomposed to hydrogen sulfide and the corresponding hydrocarbon. In heat exchange with the incoming charge the desulfurized vapors are cooled and passed to a water cooler and thence to an accumulator drum. The removal of hydrogen sulfide from the accumulator product by means of caustic washing, or otherwise, completes the operation.

The removal of hydrogen sulfide from the desulfurized product will in a large measure depend upon the economics of local conditions. In all probability, however, the most economical means will comprise straight caustic washing or water washing, or a combination of the two, or stabilization to be followed by the caustic wash, if necessary.

The materials of construction for such a unit should be equal in quality to those for a topping or primary distillation unit for high-sulfur crudes. The catalyst chambers carry from 4 to 6 tons of catalyst per 1,000 bbl. daily capacity and are to be operated at about 20-30 lb. gage pressure. With the exception of the exchangers and cooler in the case where liquid desulfurized materials are present, no special consideration need be given to the use of corrosion-resistant materials.

For units processing straightrun or natural-gasoline products that give catalyst life cycles of 2,500 to 5,000 bbl. throughput per ton no regeneration will be required. Throughputs of this order, based on the current catalyst cost of $35 per ton, f.o.b. mines, are of sufficient magnitude to preclude the installation of regeneration equipment. However, with those stocks, such as cracked and polymer gasolines which give shorter catalyst life cycles, regeneration equipment must, of course, be provided.

Yields

Theoretically, there is no significant volume loss in an operation of this type. Yields will in all cases be 100 per cent, less the usual transfer and mechanical losses. Preliminary data on plant-scale operations show better than 99.5 per cent yields from raw to finished storage.

Improvement in Product Quality

Although there is no appreciable change in the composition of the treated product other than the removal of sulfur, the clear octane number is frequently increased as much as three points or more, depending on the total sulfur content of the untreated stock. There is no appreciable change in vapor pressure, gravity or distillation characteristics, indicating the absence of any side reactions that might affect the finished product. The chief advantage of catalytic desulfurization resides in the fact that leaded octane numbers are increased as much as 10 or more points, depending upon the amount of sulfur removed. These considerations have been proven conclusively in numerous laboratory and pilot-plant investigations on a rather wide variety of stocks.

Straightrun gasolines.—Straightrun gasolines respond readily to catalytic desulfurization. In Tables 1 and 2 typical data on straightrun gasolines show savings in the order of 1.8 to 2.0 cc. of tetraethyl lead per gal. The reduced sulfur content enables the refiner to adopt very flexible blending formulas rather than to follow those predicated upon and restricted by the necessity of blending to meet total sulfur specifications. The increasing practice of ethylizing or reforming and ethylizing straightrun gasolines makes catalytic desulfurization a very attractive and economical feature. Table 3 is interesting not only from the standpoint of straightrun desulfurization, but it also illus-

TABLE 1—TURNER VALLEY STRAIGHTRUN GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	58.7	60.6	1.9
+1 cc. TEL	65.8	72.5	6.7
+2 cc. TEL	70.7	78.0	7.3
Total sulfur, per cent	0.117	0.0047	....
Total sulfur reduction, per cent	....	96.0	....
Reid vapor pressure	12.2	11.7	....
Gravity, °A.P.I.	46.1	64.2	....
Color, Saybolt	30	16	....
Distillation, °F.:			
First drop	89	90	....
10 per cent evaporated	125	129	....
20 per cent evaporated	154	157	....
50 per cent evaporated	216	217	....
90 per cent evaporated	303	309	....
End point	410	412	....
Per cent at 212° F.	471	470	....

TABLE 2—WEST TEXAS STRAIGHTRUN GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	56.5	58.2	1.7
+1 cc. TEL	63.6	69.1	5.5
+2 cc. TEL	67.5	75.0	7.5
+3 cc. TEL	70.0	78.0	8.0
Total sulfur, per cent	0.140	0.008	....
Total sulfur reduction, per cent	....	94.3	....
Reid vapor pressure	2.65	3.0	....
Gravity, °A.P.I.	54.8	55.1	....
Color, Saybolt	23	14	....
Distillation, °F.:			
First drop	144	138	....
10 per cent evaporated	198	193	....
20 per cent evaporated	214	211	....
50 per cent evaporated	259	257	....
90 per cent evaporated	343	341	....
End point	394	388	....

TABLE 3—STRAIGHTRUN NAPHTHA
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

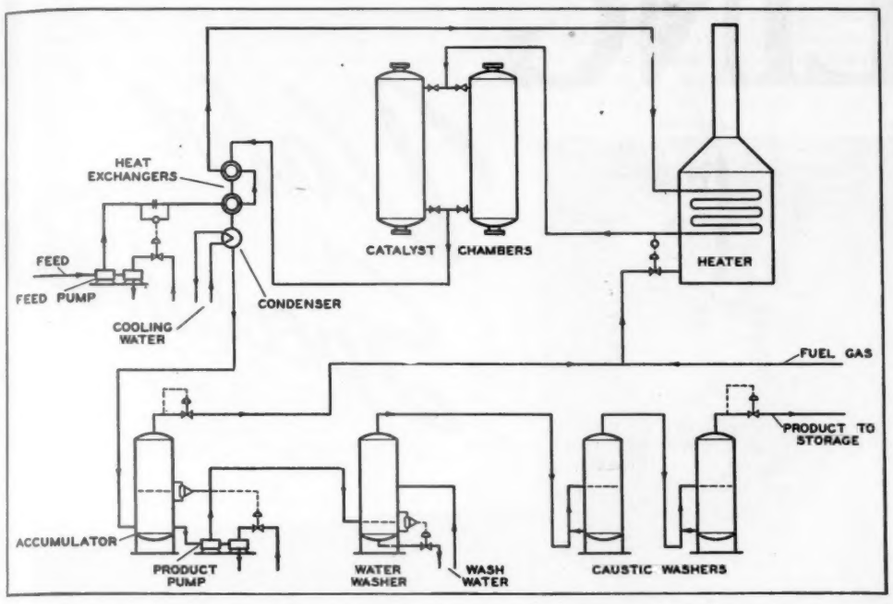
	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	45.4	49.6	4.2
+1 cc. TEL	52.0	59.8	7.8
+2 cc. TEL	56.6	66.8	10.2
+3 cc. TEL	59.8	70.5	10.7
Total sulfur, per cent	0.323	0.053	....
Total sulfur reduction, per cent	....	83.6	....
Reid vapor pressure	3.05	3.15	....
Gravity, °A.P.I.	49.6	50.0	....
Color, Saybolt	+15	—16	....
Distillation, °F.:			
First drop	137	132	....
10 per cent evaporated	226	224	....
20 per cent evaporated	265	259	....
50 per cent evaporated	335	333	....
90 per cent evaporated	409	408	....
End point	440	445	....
Mercaptan sulfur, per cent	0.119	0.0015	....
Mercaptan sulfur reduction, per cent	....	+99	....

TABLE 4—CRACKED GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization		Improvement Aver. 48 hr.
		First 24 hr.	Second 24 hr.	
A.S.T.M. octane No.	65.7	69.1	68.3	3.0
+1 cc. TEL	70.0	75.8	73.9	4.8
+2 cc. TEL	72.4	78.0	76.3	4.7
+3 cc. TEL	74.5	79.8	78.4	4.6
cc. TEL to 75-octane No.	3.26	0.80	1.36	....
Total sulfur, per cent	0.140	0.076	0.087	....
Total sulfur reduction, per cent	....	45.7	37.8	....
Mercaptan sulfur, per cent	0.062	0.003	0.008	....
Mercaptan sulfur reduction, per cent	....	95.1	87.1	....
Reid vapor pressure	9.00	11.30	10.35	....
Gravity, °A.P.I.	55.8	56.5	56.2	....
Color, Saybolt	+10	—16	—16	....
Distillation, °F.:				
First drop	93	90	92	....
10 per cent evaporated	146	139	139	....
20 per cent evaporated	188	178	181	....
50 per cent evaporated	282	277	275	....
90 per cent evaporated	375	375	373	....
95 per cent evaporated	389	398	391	....
End point	420	458	430	....

TABLE 5—THERMAL POLYMER GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	72.0	74.5	2.5
+1 cc. TEL	75.9	80.1	4.2
+2 cc. TEL	77.3	81.8	4.5
+3 cc. TEL	78.1	82.8	4.7
Total sulfur, per cent	0.373	0.064	....
Total sulfur reduction, per cent	....	82.8	....
Reid vapor pressure	10.90	12.30	....
Gravity, °A.P.I.	64.1	64.5	....
Distillation, °F.:			
First drop	87	86	....
10 per cent evaporated	126	124	....
20 per cent evaporated	148	147	....
50 per cent evaporated	192	188	....
90 per cent evaporated	378	372	....
End point	463	486	....



Flow diagram of a commercial catalytic desulfurization unit in operation near Clendenin, W. Va.

trates the adaptability of desulfurization to reforming stocks. Desulfurization of such a stock prior to reforming makes possible the manufacture of a reformed end-point product with very low total sulfur content and a higher clear octane rating as well as a much improved tetraethyl lead susceptibility.

Cracked and polymer gasolines.—As has been indicated previously, these types of stocks show a lower per cent total sulfur reduction but the improved antiknock characteristics are sufficient to offset the disadvantages of the high residual sulfur. Cracked and polymer-gasoline desulfurization units will necessarily include catalyst regeneration systems due to the shorter catalyst life cycles realized with these products. The manner of catalyst regeneration is simply the burning out of the deactivated catalyst in an atmosphere of controlled oxygen content. Regeneration may be accomplished either by burning in place or in an outside clay burner of any conventional type. Catalyst masses have been regenerated as much as 15 to 20 times with no apparent loss of activity or falling off in catalyst life cycle. Presented in Table 4 is a typical cracked gasoline exceeding a total sulfur content of 0.10 per cent and which has a rather poor octane number and lead susceptibility.

Even though the total sulfur reduction on the composite 48-hour run was only about 42.2 per cent and the net octane improvement after desulfurization only 4.6 numbers, the saving in tetraethyl lead approximates 2 cc. per gal. It is also significant to note that through the medium of desulfurization it is possible to make a base cracked blending stock that will enable the refiner to manufacture a motor fuel of much higher octane specification without increasing the consumption of lead or to meet the current specification with a reduction in lead requirement.

For the sole purpose of determining gum characteristics, a portion of the desulfurized product was rerun to a 390 end point with a yield of 96.3 per cent. With the addition of 0.005 per cent DuPont No. 14 inhibitor the product showed an A.S.T.M. gum of 0.8 mg. per 100 cc.; copper-dish gum of 2.8 mg. per 100 cc.; and an oxygen-bomb stability of more than 300 minutes.

In recent years numerous polymerization processes have been developed and many refiners have resorted to these means for upgrading overall refinery octane numbers. Unfortunately sulfur compounds in the poly feed stocks definitely have a very deleterious effect on the quality of polymerized products, as well as on the operation of the polymerization processes and especially those processes involving the use of catalysts. Some polymer products are known to have from 0.5 to 1.0 per cent total sulfur with mercaptan sulfur contents as high as 0.5 per cent. The high sulfur content of polymer products is causing many refiners to fail to realize the full benefits of their polymer products, and in those cases where it is not proper and economical to desulfurize and otherwise clean up the feed stock to the polymerization unit, catalytic desulfurization of the polymer is quite effective. The data shown in Table 5 is for a raw thermal polymer product from a unit charging a propane-butane mixture.

Natural gasolines. — Fortunately, natural gasolines of all grades and characteristics respond more readily to catalytic desulfurization than even refinery straightrun gasolines. Sulfur reductions are good and the tetraethyl lead response is very substantially increased. The stocks shown in Tables 6 to 8 are widely divergent in total sulfur content and each of them illustrates the value of the increased tetraethyl lead response by virtue of the reduced sulfur content. The sample reported in Table 7 was refractionated to a 6-lb. cut in one case and an 8-lb. cut in the other case. Even with the relatively low total sulfur contents of these two products, catalytic desulfurization offers a real advantage.

Commercial Operation

To date there are two licensed plants in operation and results, without exception, have been in keeping with pilot-plant results. One plant near Clendenin, W. Va., has been in operation for a little more than 6 months. The flow plan of this unit is similar to that shown in Fig. 1, with the exception of the fractionator. This plant has a rated capacity of 1,000 bbl. per day and all results show total sulfur reductions of 95 to 99 per cent, with a doctor-sweet product after the final caustic wash.

TABLE 6—18-LB. NATURAL GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	71.0	73.6	2.6
+1 cc. TEL	75.8	82.7	6.9
+2 cc. TEL	78.6	87.4	8.8
Total sulfur, per cent	0.295	0.0085	....
Total sulfur reduction, per cent	....	96.5	....
Reid vapor pressure	17.25	17.70	....
Gravity, °A.P.I.	84.2	84.2	....
Color, Saybolt	21	20	....
Distillation, °F.:			
First drop	80	76	....
10 per cent evaporated	90	90	....
20 per cent evaporated	95	96	....
50 per cent evaporated	114	114	....
90 per cent evaporated	180	180	....
End point	295	306	....

TABLE 7—NATURAL GASOLINE, REFRACTIONATED
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

			8-lb. fraction	
	Before desulfurization	After desulfurization	Before desulfurization	After desulfurization
A.S.T.M. octane No.	59.2	61.1	62.8	64.0
+1 cc. TEL	66.9	75.0	71.3	76.9
+2 cc. TEL	71.6	79.8	75.7	81.0
+3 cc. TEL	74.3	82.0	78.2	83.5
Total sulfur, per cent	0.057	0.005	0.0423	0.0019
Total sulfur reduction, per cent	....	91.2	....	95.5
Reid vapor pressure	6.40	6.50	8.70	8.75
Gravity, °A.P.I.	71.8	71.9	75.5	75.3
Distillation, °F.:				
First drop	121	120	106	107
10 per cent evaporated	142	143	126	125
20 per cent evaporated	147	148	130	130
50 per cent evaporated	164	164	150	149
90 per cent evaporated	226	228	216	216
95 per cent evaporated	263	265	250	242
End point	380	384	384	360

TABLE 8—PENTANE-FREE NATURAL GASOLINE
BEFORE AND AFTER PILOT-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	65.6	65.6	0.0
+1 cc. TEL	71.4	77.7	6.3
+2 cc. TEL	76.0	82.3	6.3
Total sulfur, per cent	0.096	0.008	....
Total sulfur reduction, per cent	....	91.6	....
Reid vapor pressure	5.20	5.20	....
Gravity, °A.P.I.	68.6	68.5	....
Distillation, °F.:			
First drop	145	141	....
10 per cent evaporated	161	157	....
20 per cent evaporated	164	161	....
50 per cent evaporated	174	173	....
90 per cent evaporated	229	227	....
End point	314	311	....

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Some typical inspection data of the desulfurized and undesulfurized material are shown in Table 9. This unit was constructed at a cost of $30,000 complete. On the basis of the capacity operation the operating costs to date, exclusive of indirect charges, have been as shown in the following tabulation:

Labor, 24 hours at 71 cents	$17.04
Fuel, 50 M.c.f. at 16 cents	8.00
Water (steam pump)	6.00
Caustic, 800 lb. 50 per cent at 1 cent	8.00
Steam (gasoline pump)	6.00
Catalyst (4,000 bbl./ton)	11.00
Total operating cost per day	$56.04

Inasmuch as the plant is operating very close to the rated capacity of 1,000 bbl. per day the foregoing operating costs are approximately correct and calculate 5.6 cents per barrel, exclusive of indirect charges. Since Table 9 gives an approximate tetraethyl lead savings of about 18 cents per barrel, the net savings are approximately $100 per operating day.

Another plant near El Paso, Tex., was constructed to process 400 bbl. per day of 400-end-point Ward County, Texas, straightrun gasoline. This plant was put into operation only recently; and information on its operation is rather limited; but there is sufficient evidence to prove, beyond a doubt, the feasibility of catalytic desulfurization on this type of stock. This plant, though not nearly so elaborate a construction as that of the first-mentioned commercial plant, comprises practically the same flow as the former. Results on a typical set of samples before and after desulfurization are given in Table 10. Also in this tabulation is given some data on the desulfurized material with 10 per cent added natural gasoline. Although the blend had a higher initial octane number and a higher 1-cc. tetraethyl lead point than that of the desulfurized sample, the higher sulfur content of the blend reduced the lead response so that with 3 cc. of tetraethyl lead the blend had a lower octane number than the unblended sample. The natural used in the above blend was 66 octane number and had a total sulfur content of 0.16 per cent. Due to this high sulfur content of the natural gasoline a run was made on charging stock comprising about 30 per cent natural and 70 per cent straightrun, which resulted in octane improvements shown in Table 11.

TABLE 9—PENTANE-FREE NATURAL GASOLINE AND DISTILLATE BEFORE AND AFTER COMMERCIAL-PLANT CATALYTIC DESULFURIZATION

	Pentane-free natural gasoline		Distillate	
	Before desulfurization	After desulfurization	Before desulfurization	After desulfurization
A.S.T.M. octane No.	54.7	56.3	52.2	53.1
+1 cc. TEL	60.6	70.4	59.4	66.3
+2 cc. TEL	64.0	77.9	63.8	72.2
+3 cc. TEL	67.1	80.4	67.1	75.8
Mercaptan sulfur, per cent	0.040	Sweet	0.049	Sweet
Total sulfur, per cent	0.228	0.0019	0.160	0.010
Total sulfur reduction, per cent	...	99.1	...	93.7
Reid vapor pressure	5.30	6.00	10.80	9.25
Gravity, °A.P.I.	72.3	72.9	71.5	70.8
Distillation, °F.:				
First drop	139	131	101	102
10 per cent evaporated	154	154	130	137
50 per cent evaporated	171	171	201	203
90 per cent evaporated	224	224	280	282
End point	321	324	366	376

TABLE 10—STRAIGHTRUN GASOLINE BEFORE AND AFTER COMMERCIAL-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	90 per cent desulfurized 10 per cent natural
A.S.T.M. octane No.	53.7	57.3	58.3
+1 cc. TEL	61.7	68.9	69.1
+2 cc. TEL	65.8	75.6	73.9
+3 cc. TEL	68.5	78.9	77.1
Total sulfur, per cent	0.145	0.004	0.0195
Total sulfur reduction, per cent	...	95.1	....
Mercaptan sulfur, per cent	0.039	0.001	....
Corrosion at 122° F.	Positive	Negative	Negative
Gravity, °A.P.I.	58.1	57.5	59.0
Distillation, °F.:			
First drop	114	110	107
10 per cent evaporated	169	172	157
20 per cent evaporated	199	203	188
50 per cent evaporated	257	263	253
90 per cent evaporated	343	345	340
End point	392	396	400

TABLE 11—STRAIGHTRUN GASOLINE PLUS 30 PER CENT NATURAL GASOLINE BEFORE AND AFTER COMMERCIAL-PLANT CATALYTIC DESULFURIZATION

	Before desulfurization	After desulfurization	Improvement
A.S.T.M. octane No.	59.5	61.9	2.4
+1 cc. TEL	67.1	74.2	7.1
+2 cc. TEL	72.1	79.6	7.5
+3 cc. TEL	74.6	81.8	7.2
Total sulfur, per cent	0.125	0.0032	....
Total sulfur reduction, per cent	....	97.4	....
Mercaptan sulfur, per cent	0.025	0.001	....
Reid vapor pressure	7.70	7.25	....
Gravity, °A.P.I.	62.5	62.0	....
Distillation, °F.:			
First drop	100	100	....
10 per cent evaporated	143	148	....
20 per cent evaporated	165	169	....
50 per cent evaporated	229	234	....
90 per cent evaporated	323	326	....
End point	384	386	....

SAFETY - Stationing Workman at Manhole of Towers

THE precaution of having a workman stand at the opening of a bell hole or vessel in which men are at work is often thought unnecessary, but it is the best way to minimize the danger of accidents. A little thought of the consequences of performing the task at hand is also very helpful and may save the life or lives of the workmen. Recurrence of a recent accident reported in Petroleum Safety can be prevented if these safety measures are observed.

The tray rings were being removed from the inside of a bubble tower by cutting them with acetylene torches. The hoses for the torches were brought into the tower through the lower manhole. During the removal of two trays and the center portion of the next four, hot metal was dropping to the bottom of the tower.

Reconstruction of the accident later indicated that some of the hot slag from the cutting of the trays dropped on the hose, burned a hole in the one carrying acetylene which in turn burned the oxygen hose in two. The first sign of danger to the men working in the tower was the fire at the bottom of the tower. One of the men was able to climb through the opening in the four upper trays

and reached the manhead in the top of the tower where he collapsed; it was later necessary to lower him from that position on a stretcher.

The other two men in the tower attempted to attract attention by hammering on its sides and shouting in the hope that someone outside would hear them. No one heard their distress signal but two passersby heard the burning at the bottom of the tower and shut off the valve on oxygen and acetylene cylinders. The men inside were then able to crawl out of the tower through the lower man hole and on reaching safety collapsed. All three of the men suffered acute bronchitis and conjunctivitis as the result of breathing the heavy black smoke and the acetylene fumes. Had any of them remained exposed much longer, they would have died.

The acetylene and oxygen hoses on similar jobs at that plant will be brought in through a man hole, or opening, above the point at which the cutting is to be performed. This will prevent sparks, hot metal, from striking them. A watchman will be stationed outside the tower so that he can eliminate the danger and summon aid in case any emergency arises.

Progress in METALS

By W. L. NELSON

Protective Coatings for Corrosion Fatigue

Abstract: Taken from Metals and Alloys, p. 208, Aug. 1940.

From the time of the earliest experiments on corrosion fatigue by Haigh and McAdam until the present, it has become increasingly evident that the best defense against this type of structural damage is the prevention or retardation of its occurrence. Protective coatings seem, so far, to be the most promising form of protection. At the June meeting of the American Society for Testing Materials, two interesting papers were presented on this subject.

Thomas J Dolan and Hugh H. Benninger of University of Illinois ("The Effect of Protective Coatings on the Corrosion-Fatigue Strength of Steel," Am. Soc. Testing Materials, Preprint 30, June 1940) reported on rotating-beam fatigue specimens of several grades of S.A.E. steel. John N. Kenyon of Columbia University ("A Corrosion-Fatigue Test to Determine the Protective Qualities of Metallic Platings," Am. Soc. Testing Materials, Preprint 31, June 1940) made corrosion-fatigue tests on specimens of automobile bead wire used for automobile tire reinforcement. In the Kenyon paper preliminary static, physical and fatigue mechanical tests were made on the bead wire and were found inadequate for determining the resistance of bead wire with different coatings to corrosion fatigue. The Dolan-Benninger paper assumed this inadequacy.

Test Conditions

Dolan and Benninger used rotating-beam fatigue machines giving cycles of 1,450 complete reversal of stress per minute. Kenyon used a rotating-arc fatigue machine (see Metals and Alloys, Vol. 6, Aug. 1935, p. MA331 L 5) operating at 6,000 r.p.m. and setting up cycles of reversed flexure. Essentially the rotating-arc fatigue test uses a specimen bent automatically to the arc of a circle by means of two inclined babbitt-metal guides, and from one end this wire is rotated about its axis by a motor.

The other end of the wire is left free to slide longitudinally in its guide and, in so doing, the test specimen automatically assumes the curvature of the circular arc. Some 15 in. of wire are thus subjected to equal stress reversals with fatigue failure occurring at the weakest point within this length. The rotating arc dips into an oil bath which dampens out vibrational effects. This dampening method offers a further advantage for making corrosion-fatigue tests wherein the oil bath is replaced by aqueous solutions.

Dolan and Benninger used a stream of tap water as the corroding agent. The total hardness of the water varied from 250 to 300 p.p.m., dissolved oxygen varied from 6 to 8 p.p.m., and the pH value ranged from 7.8 to 8.2. Water temperature was approximately 63° F.

Kenyon used distilled water for most of his tests with a variation of pH value in one series of tests. He also used a 3 per cent salt solution in tests of copper-zinc-plated specimens. In Kenyon's tests the wire was rotated in a bath of the corroding liquid.

The results of the tests are summarized in Table 1. Kenyon noted that plating with a more noble metal, such as copper, may actually contribute to the embrittlement of steel wire due to the rapidity of galvanic action at pinhole points of imperfection in the plating. No embrittled condition was encountered in wire that had been galvanized before plating with copper.

Dolan and Benninger noted that specimens with a silicon-impregnation case developed the same endurance limit when tested in air or in water, but the value obtained for this endurance limit was comparatively low (about 22,500 lb. per sq. in.). Zinc-plated specimens had a greater corrosion-fatigue strength than the cadmium-plated specimens, but both platings were rather thin and gave endurance limits less than 45 per cent of the fatigue strength of the uncoated steel in air. Specimens with a nitrided case proved very efficient in resisting pitting by corrosive attack, and a very high corrosion-fatigue strength was obtained for the nitrided specimens (85,000 lb. per sq. in., 80-89 per cent of the value in air).

In addition to the results shown in the table, Dolan and Benninger made a few tests on S.A.E. 3140 steel coated with Bakelite varnishes. The problem of adherence of varnish to unroughened specimens was somewhat troublesome, but there was some evidence of endurance limit of Bakelite varnish-coated specimens up to 60 per cent of the endurance limit in air.

In general, the percentage reduction of fatigue strength, due to corrosion fatigue, was less in Kenyon's tests than in those of Benninger. This may be due to a combination of several factors. Kenyon reported endurance limits of 10,000,000 cycles, while Dolan and Benninger reported endurance limits for 100,000,000 cycles. Kenyon ran his tests at higher speeds than that used by Dolan and Benninger, thus the time under corrosion for any given number of cycles was smaller in Kenyon's tests. Kenyon ran his specimens in a bath of still water, while Dolan and Benninger used a stream of water flowing over the specimen. The corroding media used were not the same, but this seems to be a rather minor factor.

Kenyon's conclusions that plating with a more noble metal (such as copper) may actually contribute to the embrittlement of the steel is worthy of careful study. The high results obtained by Dolan and Benninger with nitrided steel and protection against corrosion-pitting by the silicon impregnation of steel are of special interest.

The test results tend to confirm the current idea that the protective value of a coating agent against corrosion-fatigue depends upon its resistance to cracking under cycles of repeated stress, and upon its freedom from pinholes or cracks in the coating in a state of nominal freedom from stress.

TABLE 1—RESULTS OF TESTS ON COATINGS

Metal and coating—	Thickness of coating (in.)	Ratio of endurance limit in water to endurance limit in air	Investigators
S.A.E. 3120, quenched and tempered	.....	0.224	Dolan and Benninger
S.A.E. 3120, cadmium-plated	0.0001	.254	
S.A.E. 3120, zinc-plated	.00015	.418	
S.A.E. 3120, cyanided	.004	.238	
S.A.E. 6120, nitrided	.02	.809	
S.A.E. 1020, silicon-impregnated	.02	1.000	
Bead wire, no coating	.....	0.522	Kenyon
Bead wire, bronze-plated (displacement)	.....	.352	
Bead wire, bronze-plated (displacement)	.....	.471	
Bead wire, bronze-plated (electrolytic)	.....	.276	
Bead wire, copper-zinc-plated	.....	.520	
Bead wire, copper-zinc-plated	.....	.426	

Longer Shovel Life

We tend to become inured to regular replacement costs for shovels and other common tools but the yearly bill is often great. Oxyacetylene Tips of May 1940 suggests that the life of shovels that are used on concrete floors may be greatly lengthened by hard-facing as shown in Fig. 1. The edge may also be hard-faced but this photograph shows four strips of hard-facing material on the "heel" of the shovel. When used for shoveling cinders from beneath boilers, not only was the life extended from 2 months to perhaps years of service, but the shovels slide over the floor more easily.

Fig. 1. Four bands of hard-facing alloy are deposited on the underside or "heel" of the shovel. This picture was taken after the shovel had been in service for 2 months; yet the hard-facing deposit shows no wear

Stainless and Heat-Resisting Steels

An exceptional bulletin entitled "U.S.S. Stainless and Heat-Resisting Steels for the Petroleum Industry," has just been published by the Carnegie Steel Corp., of Pittsburgh, Pa. As well as the common discussions of service conditions, specific installations, corrosion resistance, and oxidation resistance, a portion of the bulletin discusses the metallurgy of the stainless steels and shows the equilibrium-phase diagram of the iron-chromium alloy system. By means of this diagram it is possible to extend our knowledge of the common 5 per cent chromium and 18-8 chromium-nickel steels to cover the heat treating, welding, annealing, etc., of the entire commercial range of chromium steels. A discussion of the effects of carbon, nickel, molybdenum, columbium, etc., on the equilibrium diagram is also included.

A valuable portion of the book pertains to the lining of refinery vessels in the field with stainless sheets or strips. This discussion is very detailed and is of a practical nature particularly with regard to welding technique. The 21 pages of tabulated properties and corrosion-resistance characteristics are perhaps the most complete that are now available. In addition to the common properties and composition data, the table includes data on: Specific gravity, specific electrical resistance, melting range, magnetic permeability, specific heat, thermal conductivity, coefficient of expansion, modulus of elasticity, endurance limit, Rockwell hardness, scaling temperatures, initial forging temperatures, finishing temperatures, annealing treatment, welding instructions, Charpy impact at —25° F., tensile strength at 700°-1,500° F., and air-hardening properties.

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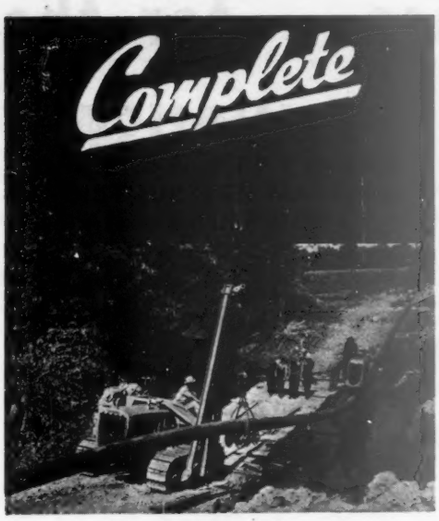

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Pipe-Line Activity

Latex Starts Construction of Texas-New Mexico Line

HOUSTON, Tex., Oct. 22.—Work on laying of Texas-New Mexico Pipe Line Co.'s new 104-mile pipe line from southern Hockley County, West Texas, to Midland, was started this week. The line, which will consist of 23 miles of 10 and 14-in. and 81 miles of 8-in. pipe, is being put in by Latex Construction Co., of Houston.

Pipe for the 19-mile 10-in. section already is on location at the Midland end, where stringing and laying now is under way. The 8-in. pipe, shipped by barge from the eastern mills, has arrived at Houston, where it is being unloaded for rail shipment to West Texas.

Three conveniently located pipe-coating plants have been set up by Industrial Engineering Co., which has the contract for this part of the work. These are located at Midland, La Mesa and Brownfield. All pipe will be unloaded at these points, and from there, after being coated and wrapped, will be trucked to the right-of-way and strung for laying.

Ontario to Build Gas Line Through McAllen, Tex.

McALLEN, Tex.—The McAllen City Commission approved a revised ordinance giving permission to the Ontario Oil Co., Ltd., of San Antonio, Tex., for construction of a pipe line through the city limits, but expressly preventing sale of gas, oil or water to consumers within the city limits. Bert Blair, engineer for the company, said the line would take gas from the R. E. Harding No. 1 Card, a large gas well about 300 ft. beyond the east McAllen city limits, and that gas would be sold to industrial consumers as far west of the city as the Rado Refining Co.'s refinery about 2 miles west.

Magnolia 42-Mile North Texas Carrier Over Half Completed

DALLAS, Tex.—Magnolia Pipe Line Co. has completed approximately one-half of its 42-mile 8-in. crude-oil pipe line from the Hull-Silk field of Archer County, North Texas, to the company's pumping station at Ringgold, in northern Montague County. The line, which is being laid by T. R. Jones of Dallas, will augment the company's gathering facilities in North Texas and is to be completed about November 1. The new carrier, of which about 24 miles has been laid, also may offer an outlet to the Ross field south of Jolly in Clay County, and to the recent discovery of Walter Gant on the Vothsburger lands in northeast Archer County.

Erection of a 55,000-bbl. storage tank in the Hull-Silk field has been completed. The company will also lay about 16 miles of 4-in. line and 2 miles of 6-in. as a gravity gathering system in the field. Magnolia, which was one of the first major companies to enter operations in Hull-Silk, has considerable holdings in the field.

Lion Now Operates 270-Mile System

Lion Oil Refining Co.'s pipe-line system, located in Arkansas and Texas, was approximately 270 miles in length as of September 1, the company announced recently. A survey shows that 525,442 bbl. of crude oil flows through the pipe lines during an average month. Of this volume, 302,318 bbl., or about 58 per cent, was the company's own production, the remainder being purchases of crude from outside sources. Storage facilities for Lion's pipe-line facilities, both in the field and at tank farms, now total 853,500 bbl.

Michigan-Toledo Pipe Line Announces Local Tariff

Michigan-Toledo Pipe Line Co. has announced tariff rates to become effective November 14. The rate of 12½ cents per barrel from Wise station, Michigan, is lower than the one previously in effect. The tariff to either Bay Shore or Toledo, Ohio, from Mount Pleasant, Crystal and Purtell stations, Michigan, was announced at 11½ cents; from North Buckeye, South Buckeye and Beaverton stations, 14 cents; from the Edenville, Mich., station, 12½ cents; and from the Wise, Mich., station, 12½ cents.

The company will receive crude petroleum for interstate transportation only to established delivery stations on its own lines, on the following conditions:

It will receive crude petroleum for interstate transportation when the shipper or the consignee has provided the necessary facilities for receiving crude petroleum as it arrives at destination.

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Pipe-Line Personalities . . . . . R. F. Hadley

R. F. Hadley

RAYMOND F. HADLEY, electrical engineer for Susquehanna Pipe Line Co., Philadelphia, Pa., recently was the recipient of the highest technical recognition in the gas industry. He received the Beal Medal for contributing the best technical paper to meetings of the American Gas Association throughout the year. The award consisted of a bronze medal and substantial cash payment. The paper which brought the award is entitled "Studies in Microbiological Anaerobic Corrosion."

Mr. Hadley was born in 1908 in Pennsylvania, and was graduated from Rensselaer Polytechnic Institute in 1932 with the degree of electrical engineer. Following graduation he was employed by the Susquehanna company as electrical engineer, and is still associated with the company as engineer in charge of corrosion field work.

In his award-winning paper, Mr. Hadley focuses attention on a type of pipe corrosion which only recently has been recognized in the United States. It involves the anaerobic bacteria which live in an atmosphere devoid of oxygen but can survive for long periods when brought to the surface. Once the bacteria have taken hold, the maximum life of a pipe is 7 to 10 years. The rate of corrosion under their attack is said to be nearly three times that of other types, with the exception of carbon contact, stray electric currents and concentrated acid.

which shall be consigned for delivery to the same delivery point.

Crude oil is accepted for transportation only on condition that it shall be subject to such changes in gravity and quality while in transit as may result from the mixture of the crude with other crude in the pipe line or tanks of the company. Delivery shall be made to consignee out of common stock of crude in the company's line and tanks at the delivery point.

Peoples Natural Leases 90-Mile Pipe Line

HARRISBURG, Pa.—The Public Utility Commission has approved the leasing by the Peoples Natural Gas Co., of Pittsburgh, Pa., to the New York State Natural Gas Corp., an affiliate, of a 90-mile pipe line extending from Pew compressing station in Limestone Township, Clarion County, Pennsylvania, to a point in Hebron Township, Potter County, Pennsylvania.

The leasing marks the reversal of a situation which existed when the line was constructed in 1936. Then the northern Oriskany gas fields were highly productive and gas was piped from that area to Pittsburgh. The leasing will permit the Pittsburgh company to furnish 2,037,978,000 cu. ft. of gas yearly to its affiliate.

The lease calls for a rental of $120,000 yearly. The cost of repairs and maintenance of the line is to be borne by the affiliate. The gas will be secured from the Hope Natural Gas Co. of West Virginia, from producers and wells of the Peoples Co. The Peoples Co. began delivery of gas to the New York company on December 5, 1939. The lease was approved retroactive to that date. The long battle over proposed introduction of natural gas into eastern territory was abandoned, meanwhile with the Metropolitan Edison Co. announcing withdrawal of an application for permission to substitute the natural fuel for manufactured gas in a plant serving customers in Marietta and Elizabethtown, Lancaster County.

Wood Has Contract for Sugar Creek, La., Line

The contract to construct an 18-mile 4-in. pipe-line outlet for the Sugar Creek field of Claiborne Parish, Louisiana, has been awarded by the Triangle Drilling Co. of Shreveport, La. The contractor is Wood Engineering & Construction Co. of Arp, Tex.

Natural-Gas System Laid At Vermilion, Alta.

VERMILION, Alta.—Franco Public Services has commenced the laying of a distribution system for the town of Vermilion. Natural gas will be supplied from the Vermilion field, near the town.

Hutchinson-Lyons Gas Line Laid

Drillers Gas Co., Wichita, Kans., is laying an 8-in. line from Hutchinson to Lyons, a distance of 30 miles.

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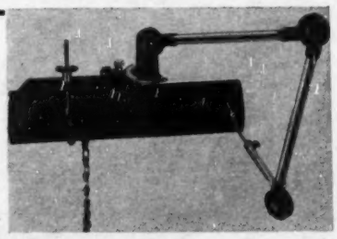

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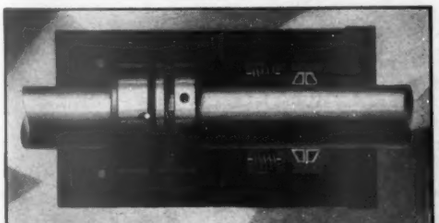

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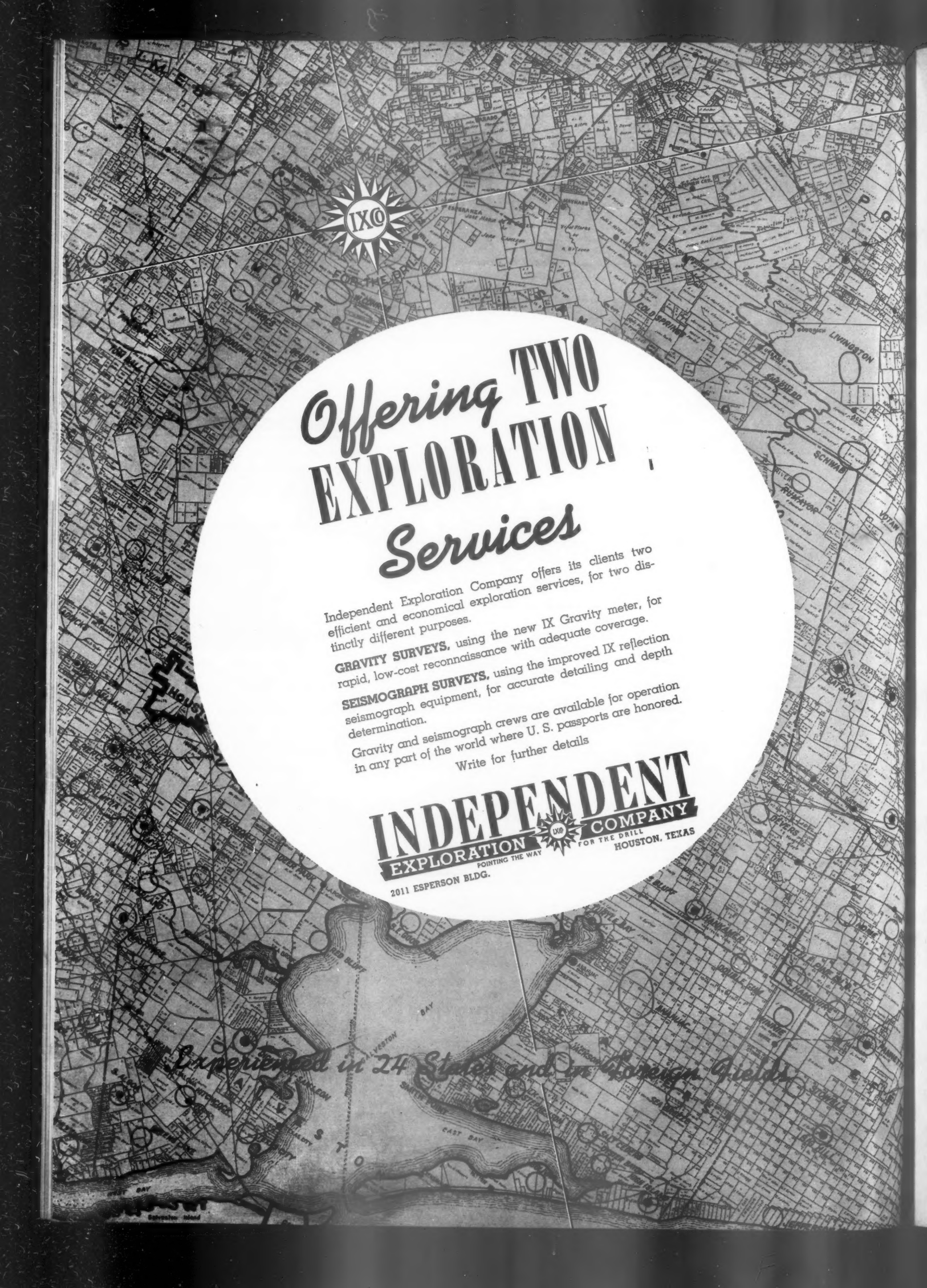
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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

OKLAHOMA: Two large producers were completed, a third new producer was being tested and four wells were started in the Cumberland pool, Marshall-Bryan counties. Newest producer in the Dill pool, Okfuskee County, started off at 100 bbl. an hour. A well in the Chickasha field, Grady County, was estimated good for 100,000,000 cu. ft. of gas daily.

KANSAS: A Viola lime pool was discovered 4 miles southwest of the Whelan chat pool in Barber County.

NEBRASKA: Two new Hunton lime producers in the Falls City pool, Richardson County, flowed 840 bbl. and 720 bbl., after acid, and a third new well flowed 300 bbl. naturally. Pressures at Falls City are declining due to 10-acre offset drilling.

LOUISIANA GULF COAST: Wildcat in St. Mary Parish shows promise of production. Erath field, Vermilion Parish, extended.

TEXAS GULF COAST: Distillate production opened on Bailey's Prairie prospect, Brazoria County. Several wildcats being started along Wilcox trend.

SOUTHWEST TEXAS: Several extensions recorded for proven fields, and important tests announced for new areas.

NORTH CENTRAL TEXAS: The Caddo lime found productive in a wildcat near Scotland in eastern Archer County which had previously found production in higher Strawn pay. A flooding project was announced for the old Woodson pool in Throckmorton County.

LA-ARK-TEX: With a blowout from the Travis Peak, the Lisbon field is taking some of the spotlight from Olla. In the latter area completion of a 1½-mile westward extension is expected in the near future.

CALIFORNIA: With the development campaign still under way, allowables cut to the resistance level and 10 per cent overproduction, California operators hope no new fields will be found this year.

PERMIAN BASIN: West Texas' fourth Ordovician pool appears to be in sight in northern Pecos County.

EAST TEXAS: A new pool is in prospect for the Woodbine sand as a Wood County test near Hawkins encounters 20 ft. of saturation at 4,903 ft.

ILLINOIS: Gallatin County's interesting wildcat, Carter 1 York, finds its fourth producing horizon. This pay is in the Hardinsburg sand.

MICHIGAN: Adams and Bloomingdale each had one good producer, while the activity in Overisel continues strong with 12 new wells started.

OHIO: The deep drilling campaign in northeastern Ohio received two more setbacks as dry holes were reported in the Clinton in Lake and Harrison counties.

COMPLETIONS IN ALL FIELDS . . .

(Week Ended October 19, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	88	22	4	114	4,974	2,910
Ohio	4	15	10	29	943	648
Indiana	4	0	6	10	368	256
Illinois	55	0	21	76	3,083	2,879
Kentucky	6	2	5	13	398	579
Michigan	8	2	12	22	949	1,169
Kansas	32	2	9	43	1,433	1,042
Oklahoma	29	7	15	51	1,455	1,423
Texas:						
North Central Texas	24	0	13	37	2,308	1,912
West Texas	24	0	6	30	1,489	1,468
Texas Panhandle	8	1	0	9	480	335
Eastern Texas	9	1	0	10	499	589
Gulf Coast Texas	14	0	6	20	1,013	1,084
Southwest Texas	26	2	10	38	1,725	1,972
Total Texas	105	4	35	144	7,514	7,360
North Louisiana	8	4	3	15	504	434
Gulf Coast Louisiana	9	0	3	12	818	571
Total Louisiana	17	4	6	27	1,322	1,005
Arkansas	5	0	2	7	152	206
Montana	4	4	3	11	186	138
Wyoming	1	0	5	6	136	108
Colorado	0	0	0	0	12	19
California	15	0	4	19	827	741
Miscellaneous	3	0	7	10	182	46
Total United States	376	62	144	582	24,384	20,996
Total previous week	396	52	137	585		
Week ended Oct. 21, 1939	360	39	122	521		

SUMMARY OF OUTSTANDING FIELDS . . .

(Week Ended October 19, 1940)

	Active operations	Oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS:					
K.M.A.	53	6	3,561	1,482	36,959
Wasson	32	5	4,114	968	23,000
Ector County	43	5	3,585	2,311	48,600
Hull-Silk	42	1	500	366	10,967
East Texas	19	5	200	25,938	374,898
OKLAHOMA:					
Cumberland	10	2	3,672	6	2,000
Hewitt	17	7	1,109	320	4,975
KANSAS:					
Bornholdt	12	3	909	129	3,630
Silica	11	3	906	700	17,400
Stoltenberg-Wilkins	17	1	350	150	4,450
Trapp	13	3	1,410	582	16,200
LA-ARK-TEX:					
Olla	9	2	490	48	4,960
Cotton Valley	4	0	0	158	13,500
MICHIGAN:					
Adams	17	1	1,800	20	1,316
ILLINOIS:					
Salem	20	8	2,243	2,935	138,951
Louden	22	7	383	999	72,247
Centralia	8	0	0	716	20,300
Other basin fields	279	40	11,223	2,542	107,605
Old fields	....	....	.....	.....	10,648
NEW MEXICO:					
Lea County	41	1	84	2,573	82,690
Eddy County	49	3	245	621	16,280
MISSISSIPPI:					
Tinsley	12	1	288	84	12,960

By

R. MARNE SANFORD

Ordovician Pool in Sight in Northern Pecos County

MIDLAND, Tex., Oct. 21.—Because many millions of dollars have been spent during the past few years on deep Ordovician exploration throughout West Texas, any wildcat even offering a remote possibility of either Simpson or Ellenburger production automatically becomes top news of the district. During the past week more than a remote possibility was seen for the opening of a new Simpson sand field in the Imperial area of northern Pecos County.

The wildcat is Taubert-McKee-Siemoneit Drilling Co. 1 Mrs. V. W. Crockett, Section 4½, Block 3. H.&T.C. Survey, about 1½ miles south of the old Magnolia and Tex-Mex 1 McKee, a costly failure several years ago. Saturated sand was logged in the newest indicated field opener from 5,270-81 ft. after topping the Simpson section of upper Ordovician at 4,755 ft., considerably higher than the old failure to the north. Early in the week 35 tons of mud were circulated in the hole to prevent a threatening gas blowout, the returning mud showing live green oil. Later in the week electrical surveys were made of the hole and casing was cemented in the lime above the Simpson sand section. After the gas had been killed a drillstem test showed 1,800 ft. of oil-cut mud. Total depth is 5,293 ft., still in the Simpson section.

The possible discovery is about 18 miles south of the Tubb Ordovician production in Crane County from the Ellenburger lime at the 5,800-ft. level. This discovery would mark the fourth for West Texas, the others being Big Lake in Reagan County, Tubb in Crane County, and Apco in Pecos County. Plug is not scheduled to be drilled out of the new test until early in the week.

Ector County

Ector County's two closely watched wildcats, one indicating a new field and the other a 1½-mile south extension for the Foster field, are both still in the testing stages again this week. Forest Development 1-H Moss, Section 48, Block 43, Township 2s, T.&P. Survey, the south extension for Foster, is cleaning out to bottom at 4,300 ft. after being shot with 1,600 qt. of nitro from 4,070 to 4,300 ft. The well had shown for approximately 30 bbl. daily, naturally.

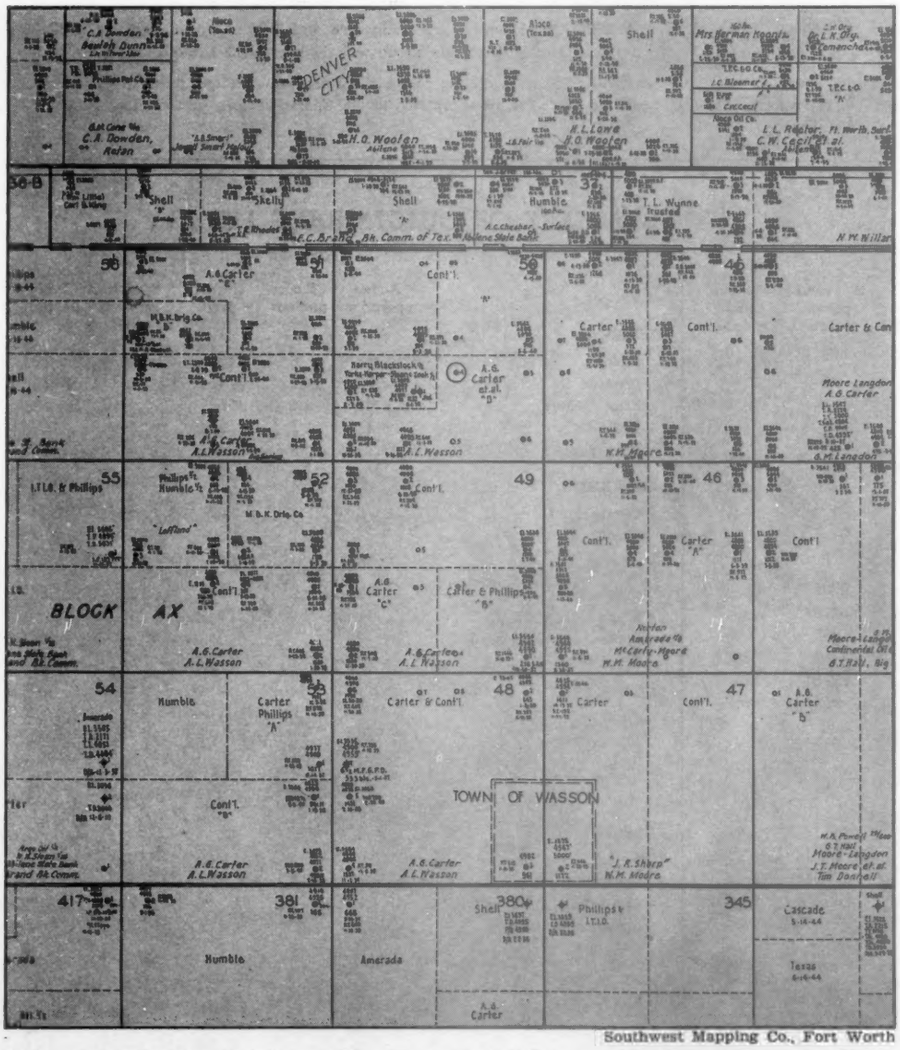
About 7 miles southwest of this outpost is Forest Development 1 Bradley, Section 18, Block 43, Township 3s, T.&P. Survey. Bottomed at 4,410 ft., some oil and gas showed on bailing tests through tubing. Bailing tests were underway at the close of the week. The 5½-in. casing has been cemented at 4,015 ft. in this wildcat.

Todd Deep Field

Official completion was registered late in the week at the ⅛-mile west extension to the Todd deep field in Crockett County, producing from a criniodal lime in the Strawn series of Pennsylvanian age. It is Amerada 1 Todd, Section 24, Block WX, G.C.&S.F. Survey. The well made 440 bbl. of oil and 97 bbl. of water on a 13½-hour test, quit at that time due to insufficient storage. Bottomed at 5,880 ft., it was treated with 1,000 gal. of acid through 34 shots in casing from 5,830-45 ft. It is the first well in the relatively new field that is making water.

Soma Field

A ¾-mile southwest outpost to the shallow Soma field in western Crockett County has been staked by Moore Exploration Co. and Olson Drilling Co. It is 1-C Halff, 330 ft. from the north and east lines of Section 68, Block 1, I.&G.N. Survey, ¾ mile southwest of the discovery well. One-half mile south of the discovery, Moore and Olson 1 Noelke-State, Section 77, Block GG, T. W. Carter Survey, which was temporarily abandoned at 1,518 ft. some time ago, is being cleaned out for retesting. Casing will be cemented for further completion attempts. It had shown some oil and gas from 1,435-90 ft.



Southwest Mapping Co., Fort Worth

In the original Wasson part of the now large Wasson field of Gaines and Yoakum counties, a test has indicated the discovery of a new and deeper pay horizon at 6,600 ft. The test is Amon G. Carter 4-D Wasson. It is now being carried deeper to 9,000 ft. in search of an Ordovician pay in this abnormally high part of the large Permian lime field

SOUTHERN WEST TEXAS COMPLETIONS

Brewster County

Wildcat: G. H. Storey 1 Wilson, Sec. 3, Blk. 211, T.&St.L. Sur., dry at 2,835 ft.

Crane County

McElroy field: Gulf 228 McElroy, 501 bbl., flowing through open casing, 670-qt. shot, 2,747-2,960 ft.
Tubb field: Humble 43 Tubb, 1,314 bbl., open tubing, 4,000 gal. acid, 4,250-4,400 ft.

Crockett County

Todd Deep field: Amerada 1 Todd, 440 bbl. oil and 97 bbl. salt water, 13½ hr., 1,000 gal. acid, 5,835-80 ft., P.B. from 6,074 ft.
Wildcats: Moore & Olson 1 Couch, W. S. Piggs Sur., dry at 2,000 ft.
Moore & Olson 1 Half, temporarily abandoned at 1,503 ft.

Ector County

North Cowden field: Broderick & Calvert 16-A Holt, 413 bbl., ¾-in. choke, 350-qt. shot, 4,275-4,417 ft.
Cities Service 7 Rhodes, 1,849 bbl., open casing, 414-qt. shot, 4,050-4,196 ft.
Goldsmith field: Phillips-Pure 8 Jessie Cowden, 83 bbl., 13/64-in. choke, 8,000 gal. acid, 4,139-4,258 ft.
Johnson field: M. J. Delaney 1-C Johnson, 1,093 bbl., open tubing, 200-qt. shot, 4,070-4,136 ft.
North Goldsmith field: M. A. Grisham 2 R. B. Cowden, 147 bbl., tubing, 3,500 gal. acid, 4,286-4,528 ft.

Pecos County

White & Baker field: John Lewis 2 White & Baker, 210 bbl., natural, tubing, 2,095-98 ft.
Pecos Valley field: Eastham & Kirby 3 Scharff & Blackmon, 8 bbl., pumping, 115-qt. shot, 1,535-1,740 ft.
Wildcat: Landreth Prod. 1 J. A. McDonald, top anhydrite 510 ft., Yates frosted quartz 820 ft., lime 1,510 ft., dry at 2,500 ft., located SE SE Sec. 37, Blk. 11, H.&G.N. Sur.
Shearer field: Street 13 Shearer, 62 bbl., 20 per cent water, pumping, 70-qt. shot, 1,497-1,507 ft.

Upton County

McCamey field: Clark & Cooper 2 King, 134 bbl. in 20 hr., 50 per cent water, 2,117-28 ft.
J. W. Ellis 1 Burleson, dry at 2,237 ft., salt water.

Ward County

Hutchins field: Gulf 147 Hutchins, 2,252 bbl., open casing, 610-qt. shot, 2,495-2,694 ft.
Gulf 148 Hutchins, 960 bbl., open casing, 534-qt. shot, 2,590-2,776 ft.

Winkler County

Hutchins field: Gulf 146 Hutchins, 506 bbl., open casing, 580-qt. shot, 2,580-2,760 ft.

(Continued on Page 75)

Complete 7, Start 11 Tests in Hewitt Extension District

By
DAL DALRYMPLE

TWENTY-TWO of 42 new operations reported in Oklahoma oil fields the past week were in the southern ranges of Carter, Bryan, Marshall, Jefferson and Stephens counties. The Hewitt extension area in Carter County was the busiest single pool in the state. Two of the new tests were in the Seay pool, a Jefferson County area that has been dormant for several months.

The Cumberland pool, on the Marshall-Bryan county line, provided two of the larger producers completed in Oklahoma during the week. Four new tests were started. There are 10 operations in the field, including several at or nearing completion stage. Pure Oil Co. 2 Little 100, SW SW SE 28-5s-7e, probably the next completion, flowed 102 bbl. of oil through 8/64-in. choke in 24 hours from the Bromide pay and testing continued. Trend of the pool may be determined soon at the company's 1 Crissman, NE NE NE 29-5s-7e, northwest outpost, which is bottomed at 5,063 ft. and due to be tested this week. At the southeast end of the pool in Bryan County Pure 1 Park College, SW SW SE 27-5s-7e, which found water at total depth of 5,231 ft., was being plugged back to 5,063 ft.

Although seven completions were reported in the Hewitt field, work there increased due to the starting of 11 tests. Two new operations elsewhere in Carter County also were reported. The week's tabulation listed 22 operations at Hewitt.

Shell Oil Co., Inc., 1 Linihan, NE SE NE 31-15-7e, pool opener in western Creek County, was shut in for pipe-line connections after flowing 78 bbl. of oil in 7½ hours from Wilcox sand topped at 4,080 ft., total depth 4,119 ft. Location is about 2 miles northeast of the Stroud pool on the Creek-Lincoln county line.

The northwest extension of the Dill pool along the Okfuskee-Seminole county line had one of the larger producers at John Droppleman and associates 3-A Dill, SE NE SE 34-12-8. It found Cromwell sand at 3,535-74 ft., total depth, and flowed more than 100 bbl. an hour. Testing continued.

The fourth producer was completed in the new Charlson zone on the west flank of the Chickasha field, Grady County, at Lone Star Gas Co. 3 Glover, C NW NE 27-5-8w. Gas was estimated at 101,000,000 cu. ft. from Charlson through perforations at 4,323-85 ft.

Work is under way at three tests on the southeast flank of the old Lovell pool in Logan County, where Danciger Refineries, Inc., completed a Layton sand producer in 3-17-4w the past week. H-P Gas Co. was rigging up at 2 Matherson, C SE SW 34-18-4w; Danciger 1 Shore, C SW SE 34-18-4w, was drilling below 3,640 ft., and Big Chief Drilling Co. and Kenneth Ellison 1 Strange, C SW SE 27-18-4w, erected derrick.

OKLAHOMA COMPLETIONS

Caddo County

Cement field: Ohio 17 Pau-Kune, CNL SW SE 3-5-9w, T.D. 3,929 ft. in shale, 5-in. 3,924 ft., perf. 3,831-50 ft., swabbed 101 bbl. in 4 hr., 40 per cent water, potential 370 bbl.
Ohio 5 Rigney, SE SW SE 12-5-9w, Rowe 3,321 ft., T.D. 3,397 ft., 4-in. 3,387 ft., perf. 3,323-48 ft., flowed 251 bbl. in 4 hr. through casing, potential 1,507 bbl.
A. L. Rollins et al 1-A Rigney, SW SW NW 12-5-9w, T.D. 4,616 ft., gaged 19,600,000 cu. ft. gas.

Carter County

Healdton field: Magnolia 80 Richards, NE NE SE SW 31-3s-3w, T.D. 1,700 ft., dry.
Hewitt field: Gibson & Jennings 1 Gill, SE SW SE 17-4s-2w, lime 2,242-45 ft., 7-in. 2,245 ft., sands 2,245-60 and 2,270-80 ft., shot with 40 qt. at 2,257-78 ft., T.D., pumped 180 bbl.
Same operators 5 Williams, CSL NE 20-4s-2w, sands 2,123, 2,133, 2,143 ft., shale 2,146-47 ft., T.D., shot with 50 qt., pumped 206 bbl.
Cox et al 2 Herrell, SW SE SW 20-4s-2w, sands 1,900-27 and 2,181-2,218 ft., T.D., pumped 40 bbl.
Same operators 3 Herrell, SE SE SW 20-4s-2w, set 7-in. 2,232 ft., T.D. 2,270 ft., pumped 100 bbl.
Gibson & Jennings 3 Hoover, SE SW SE 20-4s-2w, sand 2,175-94 ft., 7-in. 2,194 ft., T.D. 2,216 ft. in sand, pumped 90 bbl.
Same operators 4 Walker, NE NW NE 20-4s-2w, sand 2,201 ft., T.D. 2,253 ft., shot 2,215-53 ft., pumped 215 bbl.
W. F. Turner 1 Ward, NW NW NW 28-4s-2w, T.D. 2,181 ft., pumped 278 bbl.

Comanche County

Lawton field: Wichita Oils, Inc., 10 Pope, SW cor. 28-2n-10w, T.D. 437 ft., gaged 500,000 cu. ft. gas.

Creek County

Kellyville area: R. B. Wright 29 Meyer, S½ SW NW 24-17-10, T.D. 1,873 ft., pumped 16 bbl.
Bowden area: Abe Pepis 2-A Epps, NE SW NE SE 7-18-12, T.D. 2,278 ft., gaged 3,000,000 cu. ft. gas.

Garvin County

Wildcat: S. A. Thompson 1 Alliance, SW SE SW 22-4-2, Wilcox 3,282 ft., T.D. 3,424 ft., P.B. 2,900 ft., dry.

Grady County

Chickasha field: Lone Star 3 Glover, C NW NE 27-5-8w, set 7-in. 4,419 ft., T.D. 4,425 ft., perf. 4,323-85 ft., gaged 101,000,000 cu. ft. gas, 1,800 lb. R.P.

Hughes County

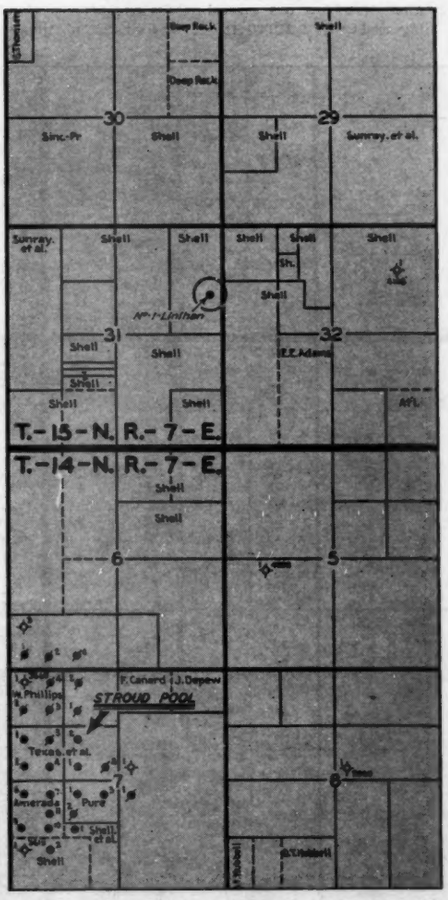
Calvin area: Ramsey Pet. 1 Vierson, SW SE SE 5-5-10, Cromwell 4,465 ft., lower Cromwell 4,610-22 ft., T.D., P.B. 4,529 ft., perf. 4,461-78 ft., pumped 172 bbl. of 37.2-gravity oil, with 700 bbl. water, in 22 hr.

Jackson County

Altus field: Kriss 1-B Inkleberger, SE SW SW 3-1n-20w, old well deepened from 1,461 to 1,676 ft., shot, pumped 3 bbl.

Kay County

Wildcats: Earl Williams 1 Trueblood, C SE SE 25-25-1w, Foraker 972 ft., T.D 1,046 ft., S.D.
Armer & Wilson 1 Deiner, NE NW SW 28-27-1w, Layton 2,950 ft., Oswego 3,345 ft., T.D. 3,650 ft. in lime, dry.
Zephyr Drlg. 1 State, NE NW SW 13-26-2w, Big lime 3,358 ft., Wilcox 3,910 ft., T.D. 3,928 ft., P.B. and perf., dry.
I.T.I.O. 1 Goodson, SW SW NE 13-28-3e, Mississippi lime 3,266-75 ft., dry.



Midcontinent Map Co., Tulsa

A Wilcox sand pool was opened in western Creek County, less than a mile east of the Lincoln County line and about 2 miles northeast of the Stroud pool, at Shell 1 Linihan, Section 31-15-7. It was shut in for connections after flowing 78 bbl. in 7½ hours from sand topped at 4,080 ft.

Logan County

Lovell field: Danciger 1 Richards, C NE NW 3-17-4w, Layton 4,850-4,903 ft., set 7-in. on bottom at 4,908 ft., perf. 4,860-90 ft., flowed 200 bbl.

Marshall County

Cumberland field: Pure Oil 1 Metz 105, NE NW NW 28-5s-7, Hunton 3,455 ft., Viola 4,025 ft., Bromide 4,590 ft., second sand 4,977 ft., T.D. 5,080 ft. in sand, cement 7-in. 4,860 ft., flowed 2,176 bbl. in 21 hr. through 1-in. tubing choke, flowed 713 bbl. in 24 hr. through 16/64-in. choke, flowed 416 bbl. in 24 hr. through 10/64-in. choke.
Pure Oil 1 Thomas 102, NE SE NW 28-5s-7, Viola 3,966 ft., Bromide 4,525 ft., first sand 4,815 ft., second sand 4,924 ft., third sand 5,070 ft., T.D. 5,091 ft. in sand, 7-in. 4,981 ft., flowed 1,496 bbl. 24 hr. through 1¼-in. tubing choke, flowed 640 bbl. in 24 hr. through 10/64-in. choke. These are the fifth and sixth producers completed at Cumberland.

Noble County

Polo pool: Stanolind 1 Devore, SW SW NW 27-22-2w, old well plugged back from 4,902 to 3,870 ft., ripped casing, pumped 87 bbl. of oil and 34 bbl. water.

Okfuskee County

Cromwell field: Titus 2 Frank, NW SW NW 25-11-8, Cromwell 3,435 ft., 6-in. 3,434 ft., T.D. 3,452 ft., flowed 1,356 bbl. oil, with 8,000,000 cu. ft. gas, pinched.
East Cromwell pool: Shell 2 Replogle, SE NE SE 35-11-8, T.D. 3,517 ft., flowed 1,530 bbl.
West Weleetka area: Fleming 2-A McKinney, SW NW SE 18-10-11, sand 1,155-78 ft., T.D., gaged 3,500,000 cu. ft. gas, 325 lb. R.P.

Okmulgee County

Bald Hill district: J. E. Wallace 19 Colbert, CEL SW NE 14-14-14, T.D. 1,022 ft., pumped 6 bbl.
W. W. Wilson 1-A Schacht, NW NW SW SE 22-14-14, T.D. 1,300 ft., dry.
Sampson Oil 1-A Sutton, CNL SE NE 33-14-14, T.D. 800 ft., dry.
C. Peterson 15 Ware, SE SW SW 9-15-14, T.D. 850 ft., pumped 5 bbl.

Osage County

Wildcat: Millard & Vance 1 Osage, SE SE SE 5-25-10, Bartlesville 1,970 ft., Burgess 2,085 ft., Mississippi 2,100 ft., T.D. 2,158 ft., dry.
South Burbank field: Magnolia 6 Osage, NW NE SW 14-26-6, Burbank zone 2,812 ft., 7-in. 2,818 ft., sand 2,834-2,902 ft., T.D. 2,904 ft., shot with 180 qt., flowed 230 bbl.
Miscellaneous: Sagamore O. & G. 409 Osage, SW NW SW 21-28-10, T.D. 812 ft., gaged 750,000 cu. ft. gas.

Payne County

Broyles area: Mulberry 9 Broyles, NE NW NW 26-18-4, old well deepened from 3,833 ft. to Wilcox 3,847-71 ft., pumped 10 bbl. oil and 250 bbl. water.
West Stillwater area: J. E. Crosbie, Inc., 1 Murphy, NE NE SW 20-19-2e, set 7-in. on bottom of Wilcox at 4,696 ft., perf. 4,488-4,525 ft., flowed 549 bbl.

Pontotoc County

Bebee field: Amos 1 Fleming, SW NE SE 13-5-4, Viola 2,474 ft., 7-in. 2,486 ft., T.D. 2,560 ft., acidized 3,000 gal., pumped 25 bbl. oil and 105 bbl. water.
Allen district: Huddleston 1 Lewis, SE SE NW 29-5-8, T.D. 1,254 ft., dry.
West Francis area: Morrison 1 Kroeger, SE SW NE 25-5-6, set 7-in. 1,494 ft., sand 1,545-50 ft., T.D., gaged 16,500,000 cu. ft. gas.

Pottawatomie County

West Konawa area: Patterson 1 Nichols, SE NW SE 28-6-5, Earlsboro 2,750-83 ft., T.D., shot with 40 qt. 2,762-78 ft., flowed 175 bbl. in 24 hr., cutting 5 per cent.

Seminole County

Cromwell field: Wise 1-A Berryman, SW NE NW 10-10-8, sands 1,664-75 and 1,824-41 ft., T.D., P.B. 1,674 ft., shot with 40 qt. 1,664-74 ft., pumped 25 bbl. oil and 25 bbl. water.
East Seminole area: Justin Oil 1 Rhea, S½ SE SW 12-9-6, extended East Seminole pool ½ mile northeastward, Hunton 4,033 ft., 5-in. on top lime, T.D. 4,061 ft., acidized with 4,000 gal., pumped 25 bbl. of 34.5-gravity oil and 10 bbl. water.
Little River field: I. T. I. O. 2 Sakepeche, NW NW NE 1-7-6, old well deepened from 4,318 to 4,396 ft., dry.
Newsom 1-A Choya, NW SW NW 21-7-6, Calvin 2,326-39 ft., T.D. 2,342 ft., shot, flowed 40 bbl. of 40-gravity oil.
Dill field: John Droppleman 1 Hensley, NW NE NE 3-11-8, Cromwell 3,548 ft., T.D. 3,618 ft., dry.
West Konawa area: C. E. Davis et al 2 Slaughter, SE NW SW 34-6-5, T.D. 3,210 ft., pumped 50 bbl.

Stephens County

Doyle pool: Sunray 2 Hefner, SE NW SW 12-1n-5w, sand 6,165-6,203 ft., T.D. 6,242 ft., acidized 2,000 gal., pumped 120 bbl.
North Duncan area: R. M. Scott 1 Reeburgh, SW SE NE 14-1n-9w, T.D. 1,700 ft., dry.

Tulsa County

Bird Creek area: C. A. Bingham 1 Kinley, 14-21-12, Burgess sand 1,496 ft., T.D. 1,506 ft., shot by Mid-

(Continued on Page 86)

Well at Lisbon Blows Out in Travis Peak Formation

By
GEORGE WEBER

SHREVEPORT, La., Oct. 21.—A gas blowout last week attracted attention to the Lisbon field of Claiborne Parish, where a new Travis Peak horizon promises new production. Oakes, Caruthers & Morelock 1 Whitman, in the southwest part of the field, topped the Travis Peak at 5,352 ft., and was coring from 5,389-5,409 ft. when the well blew out making an estimated 5,000,000 cu. ft. of gas. The test was killed and operators are conditioning mud. The well, a former producer from the Pettit horizon at Lisbon, was deepened after the upper Travis Peak showed an oil sand in a nearby deep test. The blowout, and the possibility of opening new oil production at that level, will result in more deepening jobs at Lisbon. Already a new operation in the field, deepening of T. L. James 1 Lowery, a former dry hole about 4 miles southeast of the Oakes test, has begun.

J. D. Caruthers, trustee 1 Simmons unit, ¼ mile south of the Oakes blowout, has encountered a gas show in the Cotton Valley formation. A core taken at 8,391-8,411 ft. showed recovery of 20 ft. of slightly porous sand, with a gas odor, and operator is coring ahead. The Caruthers test encountered 17 ft. of oil sand indicated from cuttings and core, between 5,341-62 ft., which led to the deepening of the Oakes well which blew out in the same section last week.

A westward extension of 1½ miles is awaited at Olla as the Arkansas Fuel Oil Co. 9-C Tremont Lumber Co. tests this week end. The outpost encountered oil and gas sands in the Wilcox at 2,252-65 ft., 2,272-77 ft., and 2,770-2,810 ft. The test was plugged back from 3,950 ft. to 2,450 ft., and 7-in. casing set at 2,351 ft. Perforations were shot at 2,272-77 ft. this week end, and at latest reports operators were swabbing to test.

Field activity continues strong at Olla, with most operations on the south end of the field undefined excepting on the east.

The Nebo field, recently discovered Wilcox production south of Jena, is expected to be extended to the southwest, as the H. L. Hunt 3-A Goodpine awaits a test, with casing set at 3,905 ft.

To the west in Winn Parish Atlantic 1-C Goodpine failed to find production possibilities in the Olla zone of the Wilcox. The formation was topped at 1,399 ft., and the wildcat was last reported drilling below 2,734 ft. A new wildcat which will explore the deeper Wilcox possibilities is Speir & Nance 1 Armstrong, 2½ miles southeast of the Georgetown field, in Grant Parish, about 9 miles southwest of Olla.

Completion of the O. K. Allen 1 Breedlove, 2½ miles northeast of Olla, is considered an extension to the gas area opened by the Placid Oil Co. in 19-11-3. The Allen test blew out several weeks ago after perforating casing at 2,210-20 ft. It was controlled, plugged back to 2,175 ft. and last week perforated at 2,164-67 ft., making an estimated 5,000,000 cu. ft. of gas at a rock pressure of 940 lb.

Joaquin Extended

Union Producing Co. completed 1-B Garrett, 33-12-16, De Soto Parish, for an initial production estimated at 40,000,000 cu. ft. of gas. The test was plugged back from a total depth of 6,271 ft. to 6,029 ft., and with 6-in. casing set at 6,060 ft., perforated at 5,980-97 ft. Since the test is located about 5 miles north of the Joaquin field of Shelby County, Texas, it is considered to be an extension of that field. However, production is coming from a porous lime section considerably deeper than that producing in the field proper. Both the outpost and the field wells are producing high-pressure gas and condensate from the lower Glen Rose.

ARKANSAS

The Nick Springs and Urbana fields of Union County are seeing some drilling activity as the remainder of South Arkansas remains quiet. At Nick Springs, the Travis Peak sand produced two more wells last week. The Crain sand pool at Urbana has four active operations at present.

EAST TEXAS BORDER

New work in Panola County is reported planned by Glassell & Glassell whose holdings center east of Carthage. Arkansas Louisiana Gas Co. has almost completed its drilling program for this year at Waskom. Announcement of a drilling program for the Joaquin field is expected from the Southern Production Co., subsidiary of Southern Natural Gas Co., which recently acquired large holdings in Shelby County.

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

F. W. Bennett 2 Askew . . . . . NW SE NW 28-21-15
100 bbl., 4,000 gal. acid, T.D. 1,500 ft.
D. B. Barnett et al 2 Muslow . . . . SE NW SW 31-21-15
Pumping 25 bbl., T.D. 1,500 ft.
Davis & Hart 2 Muslow . . . . . NW SW NE 5-20-15
Pumping 75 bbl., 4,000 gal. acid, T.D. 1,504 ft.
A. R. Hancock 11 Louark fee . . . SW SE NE 18-21-15
Pumping 20 bbl., 3,000 gal. acid, T.D. 1,720 ft.
W. B. Johnson Drlg. Co. 3 Stiles . SW NW SW 22-21-16
Dry, T.D. 2,395 ft.
J. E. Kemp 1 Stoer . . . . . NW NW NW 32-21-15
Pumping 30 bbl., 4,000 gal. acid, T.D. 1,530 ft.
Magnolia 26 Doan Thigpen . . . . C E½ E½ NW 6-20-15
Pumping 80 bbl., 50 per cent salt water, 4,000 gal. acid, T.D. 1,504 ft.

Wildcat—Concordia Parish

K. Hughes 1 Pittsfield 41-8n-10e
1,610 ft. S NW cor., 45 ft. W W line, Sec. 40, dry, T.D. 6,800 ft., sidewall core at 2,206-09 ft., show oil.

Wildcat—De Soto Parish

Union Prod. Co. 1-B Garrett . . . . . C W½ SE 33-12-16
Set 5½-in. casing 6,060 ft., T.D. 6,271 ft., perf. 5,980-97 ft., 82 shots, 5,000 gal. acid, est. 40,000,000 cu. ft. gas, open flow, R.P. 2,900 lb., porous lime 5,982-95 ft., lower Glen Rose.

Wildcat—Grant Parish

Peterson Pet. Corp. 1 Swope . . . . SE NW SE 18-9-1e
Salt water, abandoned, T.D. 1,609 ft.
O. K. Allen, Jr., et al 1 Breedlove . SE SE NW 32-11-3e
Old T.D. 2,540 ft., P.B. 2,175 ft., set 6-in. casing 2,257 ft., perf. 2,164-67 ft., R.P. 940 lb., Wilcox.

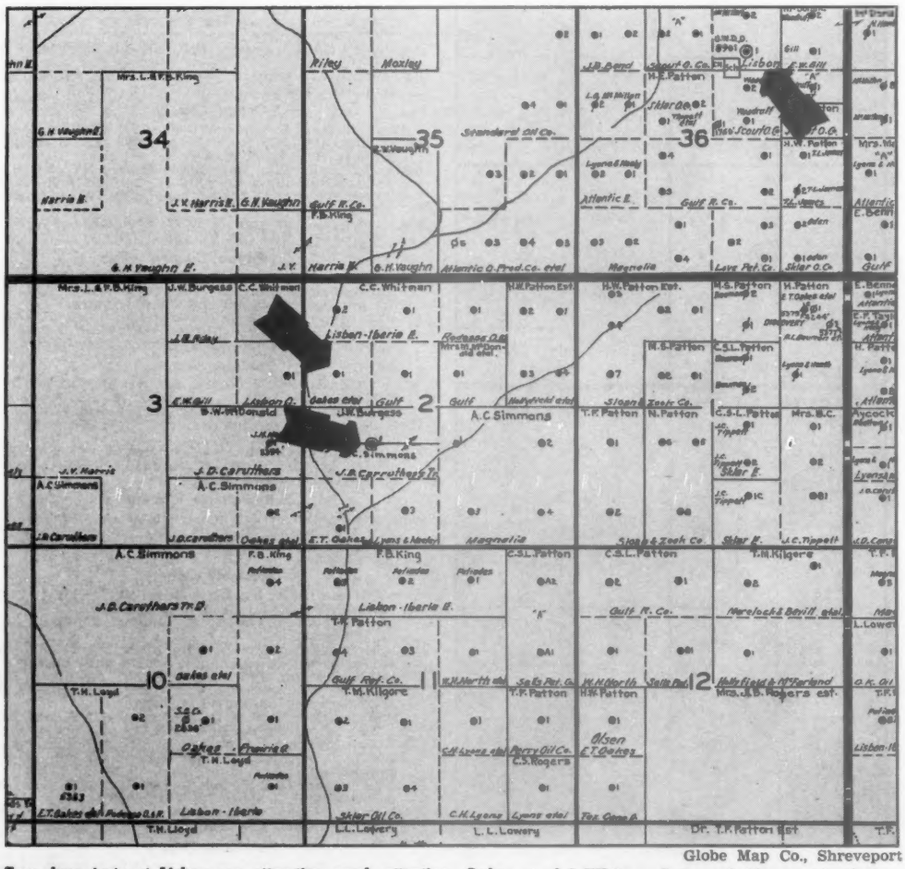
Olla—La Salle Parish

Placid 39 Louisiana Central . . . . . NW SE 25-10-2
200 bbl., 2 per cent salt water, 14/64-in. choke, T.P. 40 lb., C.P. 230 lb., set 7-in. casing 3,475 ft., perf. 2,240-50 ft., tested gas, squeezed off and reperf. 2,240-50 ft., Wilcox.
Placid 44 Louisiana Central . . . . . NE NW 13-10-2
288 bbl., 3 per cent salt water, 16/64-in. choke, T.P. 120 lb., C.P. 420 lb., T.D. 2,392 ft., perf. 2,240-50 ft., Wilcox.

Monroe—Morehouse Parish

Southern Carbon Co. 33 Tensas 28-22-4e
2,500,000 cu. ft. gas, R.P. 875 lb., T.D. 2,200 ft.
Southern Carbon Co. 34 Tensas 28-22-4e
4,000,000 cu. ft. gas, R.P. 935 lb., T.D. 2,200 ft.

(Continued on Page 77)



Globe Map Co., Shreveport

Two deep tests at Lisbon are attracting much attention. Oakes et al 1 Whitman last week blew out in the top of the Travis Peak, in a section which showed oil in the Caruthers, trustee, 1 Burgess, ¼ mile south. The latter test this past week cored a sand section in the Cotton Valley formation which appears more favorable for production than that from which the Lisbon Exploration Co. 1 Vaughn is producing. The Lisbon Exploration well, in Section 36, was the first deep test drilled at Lisbon, and is producing gas and condensate from the Cotton Valley formation

By R. MARNE SANFORD

Eastern Archer County Gets New Field in Caddo Lime

WICHITA FALLS, Tex., Oct. 21.—Continuing the trend of deep discoveries throughout North Texas, the district's newest strike is from the Caddo lime and in eastern Archer County. Walter Gant's indicated discovery of a week ago in eastern Clay County has developed salt water and has shut down. To keep new exploration active four wildcats were preparing to start at the close of the week, two of them in the southern part of the Fort Worth basin.

The Archer County discovery is Shell Oil Co., Inc.'s long active 1 Coleman, 5 miles northwest of Scotland. Located in Lot 3, Block 74, A.T.N.C.L. Survey, the well found shows of oil in the Strawn from 3,650 to 3,700 ft. several weeks ago but was carried ahead as a deep test. The Caddo lime was topped at 5,009 ft. and casing was set at 5,471 ft. for completion attempts from small shows. Through perforations from 5,320-30 ft. no oil was recorded. It was plugged back to about 5,200 ft. and tested only 1 bbl. oil hourly on swab. While preparing to plug back further to the Strawn section, the well was acidized with 2,000 gal. through perforations from 5,009-14 and 5,042-58 ft. and kicked off to flow into pits. When turned into tanks it made 225 bbl. of oil in 3 hours through 4½-in. casing.

Clay Test Gets Water

Walter Gant 1 Stine, 1½ miles west and slightly north of the Ringgold field of western Montague County, which indicated either a new discovery or a major extension to the field last week, has been shut down for orders after salt water was tested in the prospective pay zone. Casing is set at 5,569 ft. on top of the Caddo lime topped at 5,576 ft., considerably higher than wells in the Ringgold field. Whether the hole will be carried deeper to test the Ellenburger was not reported.

Fargo Field

Activity was on the increase in the Fargo field of northern Wilbarger County at the close of the week. One new well was completed, another had set casing on top of the pay, a new location was reported and a 3-mile northeast outpost was preparing to start up. Humble Oil & Refining Co. has run 5½-in. casing in its 1 Anderson, Section 33, Block 15, H.&T.C. Survey, southwest offset to the discovery well, and is preparing to drill plug this week. Amerada Petroleum Corp., discoverer of the field, has completed its 1-A Goodpasture, third producer for the field and second from the discovery pay. The well made 44 bbl. of oil hourly for 9 hours from pay from 3,224-54 ft. Amerada has staked location for its 1 O. H. Dodson, a northwest offset to the original discovery well. Three miles north of the Fargo field Stidham & Sons 1 Watts, Section 64, Block 15, H.&T.C. Survey, is preparing to resume operations at a total depth of 3,144 ft. where it shut down last June.

Wildcat Tests

In Archer County Continental Oil Co. and Petroleum Producers have announced a new test for a small and undeveloped field opened about 2 years ago on the State Hospital lands south of Wichita Falls and in northern Archer County. The test will be carried to 5,000 ft. to test the Caddo lime and is 1 O. Bullington, 660 ft. south and east of the same operators' 1 Finkler, in the Mathew Doyle Survey.

Jack County received a new wildcat operation when Steed & Wilson of Dallas announced location for 1 M. L. Barrey, southwest part of S.F.I.W. Survey, Abstract 1562. Derrick has been erected and it will be carried to 3,200 ft. to test the Bryson sand found productive in the Cooper-Steed field about 1½ miles southwest.

In Denton County High Point Oil Co., Fort Worth, has announced intentions to drill a 2,500-ft. Ellenburger lime test on the top of the Muenster arch 3 miles east of Sanger in the northern part of the county. It will be 1 Warfield, Manchaca Survey, on an 800-acre tract.

A possible new location for the Tarrant County portion of the Fort Worth basin was in prospect when Bruce Sullivan, Fort Worth, made tentative location for a 6,500-ft. wildcat 5 miles north of the city of Fort Worth. The site is near the center of the W. C. Putnam 200-acre tract in the Milley Gilbert Survey and contract has been let to E. C. Norwood of Wichita Falls. It is on a block of about 6,000 acres held by the operator, spreads having been taken by Magnolia, Sinclair, Prairie, Texas Pacific, Seaboard, and others, toward the drilling of the well.

Wise County's closely watched wildcat of several weeks ago, which has been shut down due to lost tools in the hole, had sidetracked the tools early the past week only to encounter more difficulty late in the week when the drill stem was twisted off in drilling the new hole to 5,520 ft. A whipstock was set at 5,092 ft. to drill by some 500 ft. of drill stem. The drill pipe is believed to have twisted off the second time at about 5,100 ft. Future course of the operators was not known. The test is Cranfill & Rogers 1 McKay, west of Park Springs and in Block 8, Falls County School Lands Survey.

NORTH TEXAS COMPLETIONS

(24-hour gages)

Archer County

Holliday field: Burns 8 Ahrens, 15 bbl., 595-600 ft.
Burns 9 Ahrens, dry at 535 ft.
Megargel field: Shell 9 Colgan, 80 bbl., 1,455-63 ft.
Texas Co. 25 Richardson, 8 bbl., 1,320-27 ft.
Hull-Silk field: Lipscomb 5 Wilson, 500 bbl., 4,345-4,410 ft.

Clay County

Thornberry field: Johnson & Kouri 2 Taylor, dry at 1,010 ft.
Nixon 7 Boddy, 8 bbl., 1,311-20 ft.
Sussex Oil 14 Glasgow, 79 bbl., 1,084-1,255 ft.

Cooke County

Voth field: Humble 5 Heilman, 306 bbl., 1,241-47 ft.
Muenster field. Trumpter Pet. 5 Stacey, 15 bbl., 745-56 ft.
Wildcat: Humble 1 Rivoire, dry at 3,924 ft.

Jack County

Mathis field: Leach-Smith 1 Worsham, 364 bbl., 2,854-75 ft.

Montague County

Ringgold field: British American 2 Martin, dry at 5,965 ft.

Wichita County

K.M.A. field: Cooper 57 Waggoner, 1,075 bbl., 3,725-52 ft.
Dalport Oil 6 Munger Bros., 678 bbl., 3,795-3,862 ft.
Fagadau 2 Barnes, 820 bbl., 3,982-4,019 ft.
Hammon, Hanlon & Buchanan 28 Fassett & Tuttle, 350 bbl., 3,890-3,969 ft.
Hanlon-Buchanan 23 Fassett & Tuttle, 350 bbl., 4,029-84 ft.
Hoppes & Newell 6 Seay, 288 bbl., 3,651-3,830 ft.
Iowa Park field: L. V. Hull 11 Kemp & Kempner, dry at 699 ft.
Electra field: Hammon 18 McCarty, 6 bbl., 1,714-20 ft.
Ross Drilling Co. 9 Waggoner, 7 bbl., 431-36 ft.
Burkburnett field: J. R. Prince 1 Warren, 10 bbl., 1,310-18 ft.

Wilbarger County

Electra field: George Davis 6 Waggoner, dry at 530 ft.

Young County

Newcastle field: J. T. Harrell 1 Rogers, 78 bbl., 878-92 ft.
W. A. Scarbrough 1 Bryant, dry at 790 ft.
Carl Wainwright 1 Rogers, dry at 912 ft.
E. D. Willis 1 Stewart, 8 bbl., 821-55 ft.

NORTH TEXAS DRILLING REPORT

Archer County

Walter Gant 1 Hunter, SE NW Sec. 7, Blk. 1, H.&T.C. Sur., 5,300-ft. Caddo lime test, first report.
Jack Kadane 1 Griffin, SW SE blk. 13, P.P.C.S.L. Sur., 4,500-ft. test, 1½ mi. E Griffin field, first report.
Omohundro 1 Wilson, Sec. 5, Blk. 3, H.&T.C. Sur., 1 mi. N Mankins field, rigging up to deepen below 4,417 ft., first report.
Shell 1 Coleman, Lot 3, Blk. 74, A.T.N.C.L. Sur., set 4½-in. 5,458 ft., drilled plug to 5,468 ft., flowed salt water, P.B. 5,200 ft., acid 2,000 gal. 5,009-14 and 5,042-58 ft., flowed 225 bbl. in 3 hr.

Clay County

L. T. Burns 1 Calloway, Lot 9, Hopkins County School Lands Sur., Abst. 176, T.D. 5,356 ft., new contract depth 6,000 ft., drilling 5,498 ft.
Walter Gant 1 Stine, Sec. 25, H.&T.C. Sur., 6,000-ft. test, 10-in. at 510 ft., cored lime showing oil 5,641-77 ft., 5½-in. at 5,569 ft., drilled plug, showed salt water, S.D.
E. C. Norwood 1 Shipley, Blk. 29, Madison C.S.L. Sur., rigging up to deepen below 5,066 ft., first report.
L. T. Burns 1 Calloway, Blk. 9, Hopkins C.S.L. Sur., rigging up to deepen to Caddo lime from old depth of 4,356 ft., first report.

Baylor County

Rogers & Lanfair 1 Howe, J. Lowe Sur., Abst. 572, S.D.O. 2,215 ft.

Denton County

Amon G. Carter 1 W. P. and A. P. Allen, S. Westbrook Sur., S.D. 4,000 ft., planning to drill deeper.
Harvey Bros. 1 Knox, R. Howard Sur., Abst. 542, old T.D. 1,357 ft., show oil 1,467-93 ft., set 6⅝-in. at 1,465 ft., drilled plug, show oil and gas, testing.

Grayson County

Texas Co. 1 Hutchinson, Samuel Stewart Sur., northeast corner of county, 7,500-ft. test, drilling 2,500 ft.

Jack County

Continental 1 Robertson, M. J. Swan Sur., Abst. 1650, 4,600-ft. test, 7-in. 4,643 ft., testing 2,500,000 cu. ft. gas and spray of oil, drilling 4,838 ft.
R. A. Conkling 1 M. Hoofle, A. James Sur., Abst. 318, 3 mi. S of Antelope, 3,500-ft. test, S.D. 3,410 ft.
Rathke Oil 1 Moseley, J. Harrison Sur., Abst. 259, 6⅝-in. at 4,465 ft., show gas 4,498-4,500 ft., waiting on casing.
Hanlon-Buchanan 1 Smith, NW cor. Smith tract in S. H. Tilgham Sur., 8 mi. SW Jacksboro, 3,150-ft. test, first report.
K. N. Davies 1 Jones, NW cor. E½ Sec. 2555, T.E.&L. Sur., 1 mi. SE Perrin, 2,500-ft. test, first report.

Montague County

Walter Gant 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 mi. W of Sunset, 6⅝-in. casing at 6,641 ft., T.D. 6,651 ft., preparing to perf. casing and test.
Seitz, Comegys & Seitz 1 Harris, B.B.B.&C. Sur., 10 mi. S of St. Joe, 6,000-ft. test, drilling 6,210 ft.

Wichita County

E. P. Bowen 1 F. M. McKinley, William Anglin Sur., 2 mi. N of Wichita Falls, contract depth 4,500 ft., drilling 5,737 ft.

Wilbarger County

Charles Barnes and R. A. Andrews 1 Clarida, NE Sec. 97, Blk. 14, H.&T.C. Sur., location.
Amerada 1 Parker, Sec. 36, Blk. 15, H.&T.C. Sur., 5½-in. 4,407 ft., show oil 4,437-55 ft., 5,000 gal. acid, est. 10 bbl. per hr., flowed 33 bbl. in 1 hr. and died testing.

Wise County

Cranfill & Rogers 1 McKay, Sec. 8, Falls C.S.L. Sur., set whipstock at 5,092 ft., drilled to 5,520 ft. and twisted off drill pipe, fishing.

Young County

Ben H. Rankin 1 Marry Logan, SW part Blk. 2, J. W. Doty Sur., 8 mi. NE Graham, 2 mi. W Nelson field, 3,250-ft. test, first report.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Oct. 21.—Work was started last week on one of the largest water-flooding projects for West Central Texas in several years. The secondary recovery practice will be applied to the 10-year-old Woodson field of southern Throckmorton County, developed by the Woodley Petroleum Co. of Houston in 1931.

The field, consisting of about 300 acres and originally 80 wells, was purchased by Dean Brothers, Fort Worth, and K. B. Nowles of Abilene will be the engineer in charge of the flooding. Out of the original 80 wells from the shallow sand at 350 ft., there are 72 still producing about 20 bbl. daily, aggregate, or an average of about ¼ bbl. daily per well. Water will be obtained from the old Humble lake west of Woodson and a 3-in. line is to be laid to the field. Water will be fed into the input wells at about 45 to 90 bbl. per minute.

Palo Pinto Lime Activity

The sixth test for the recently opened Nowles field of southern Haskell and northern Jones County is preparing to start early this week. It is J. C. Hunter and associates 1 Pardue, SE part of Section 1, S.F.I.W. Survey, about ½ mile east of the discovery well. Two of the five tests already drilled in the area were failures, there being three producers in the field. Production is from the Palo Pinto lime.

Southeast of the Nowles field and in northeastern Jones County King Oil Co. is nearing the Palo Pinto lime in its 1 C. H. Seth, northwest offset to the same

(Continued on Page 78)

Several Extensions Found in Southwest Texas Fields

By
F. L. SINGLETON

CORPUS CHRISTI, Tex., Oct. 21.—While there were no outstanding developments in the Southwest Texas district the past week, extensions to several proven fields were recorded, and additional activity was reported for newly opened areas.

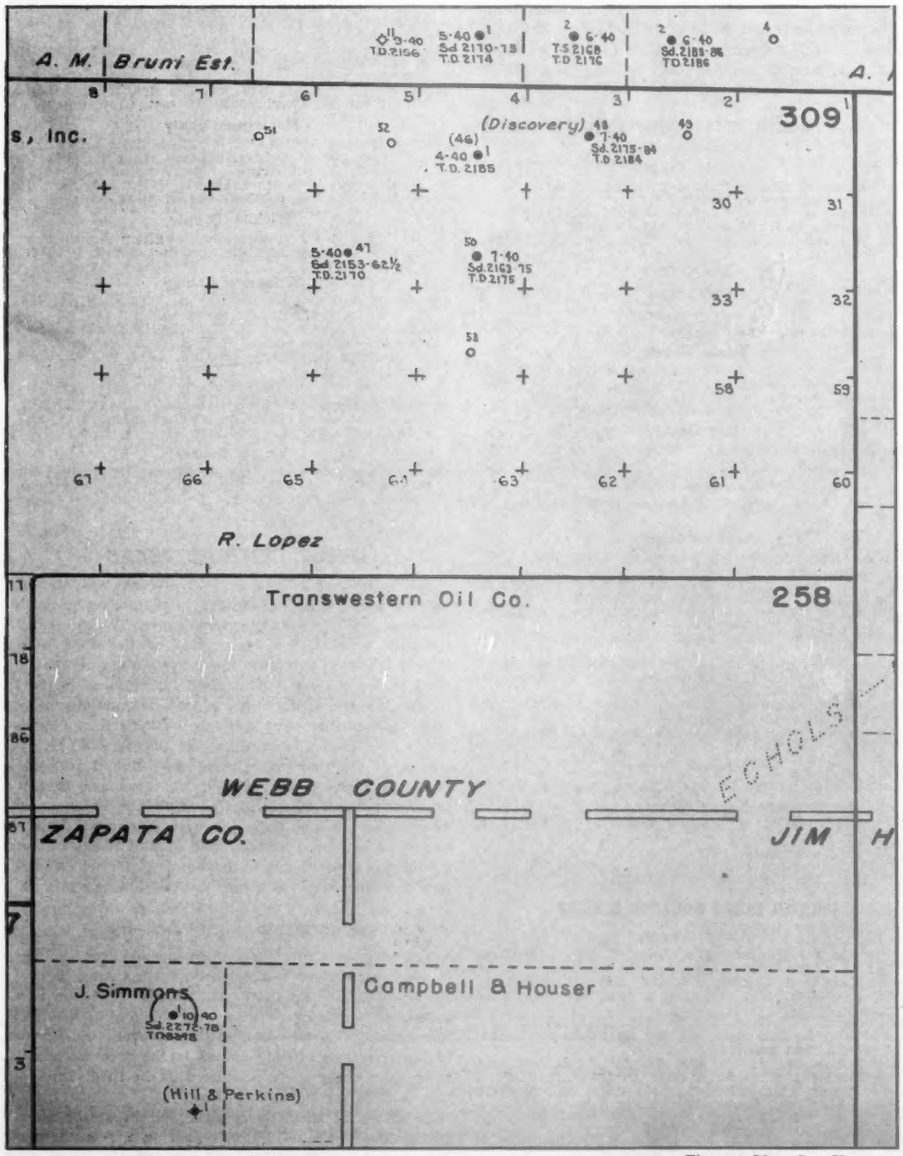
Humble Oil & Refining Co. extended production in the East Flour Bluff field, Nueces County, approximately 1,500 ft. to the north as 5-D State flowed 148 bbl. of pipe-line oil per day through a ⅛-in. choke. Tubing pressure was 1,125 lb. The well was drilled to a total depth of 6,791 ft. and was completed with 5½-in. casing cemented at 6,781 ft.

In the same county and offsetting the discovery well of the Shield field, Fred W. Shield 1 Lewis was officially completed for an initial production of 50 bbl. of oil and 30 bbl. of salt water per day flowing through ⅛-in. choke. Tubing pressure was 625 lb. and casing pressure 425 lb. The discovery sand was topped at 6,606 ft. and the well was completed through perforated casing after plugging back to a total depth of 6,616 ft.

Agua Dulce Field Active

On the southeast flank of the Agua Dulce field, and approximately ½ mile east of Richardson Petroleum Co. 2 McCoy which opened important crude production the previous week, the same company is drilling in shale and lime below 5,200 ft. in 1 Guaranty Title & Trust Co., located in the Palo Alto grant. To the southwest and located on the east flank of the Stratton field, crude production was extended about 900 ft. east as Bay-Tex Oil Corp. 2 Union Central Life Insurance Co. flowed 107 bbl. per day through ⅛-in. choke from perforated casing at 6,706-19 ft.

In San Patricio County and located about 2 miles southwest of the town of Mathis, Gorman & Yoakum 1 C. A. Maedgen was being watched with interest as it drills ahead below 4,600 ft. The well is reported to have cored sand with a slight showing of oil at 4,589-91 ft., but no drill-stem test was made. Location is in the M. P. and J. N. Delgado Survey.



Zingery Map Co., Houston

J. Simmons et al 1 Yeager-Strohman, important south extension to the Glen field, Webb County

Frio-Vicksburg Discovery Completed

Henshaw Brothers 1 Gorman, the discovery well of a new field, 3 miles southwest of the Orange Grove townsite, flowed 91 bbl. of oil per day through a ⅛-in. choke. Tubing pressure was 675 lb. and casing pressure 775 lb. Gravity of the oil tested 30.5°. The well was completed in the Frio-Vicksburg pay through perforated casing at 5,139-45 ft. Offsetting this well to the west the same operators were rigging up for 1 E. P. Boerner.

In the St. Charles field, Aransas County, Continental Oil Co. is moving in material for 3 St. Charles Co., approximately 1,800 ft. east of the discovery well, a distillate producer. Contract depth is 10,500 ft.

Gas and distillate production was extended approximately 1,300 ft. in the Edwards field, Victoria County, as Titanic Oil Co. 3 T. C. Edwards tested 3,000,000 cu. ft. of gas, with a spray of distillate per day through a ⅛-in. choke. The well was drilled to a total depth of 5,902 ft. and was completed through perforated casing at 5,015-35 ft.

In the Thomaston field, De Witt County, Atlantic 1 W. E. Conwell, 1 mile northeast of the discovery well, was tested through perforated casing at 7,904-40 ft., and on a 32-hour drill-stem test the well flowed from 8 to 10 bbl. of oil and salt water, and when the drill stem was pulled 7,904 ft. of salt water was recovered of which 3 per cent was 29.7-gravity oil. Several tests made in the Wilcox formation below the discovery horizon tested gas and salt water, and the next test is expected to be made at approximately 7,800 ft., the discovery pay.

Charamousca Field Extension

In the Laredo district and located about 1 mile southeast of the Charamousca field, Duval County, Magnolia 3 Duval County Ranch Co. is reported to have jetted 15 bbl. of oil per day from sand at 1,042-48 ft. The well is located in Survey 289, just north of 1 Duval County Ranch Co., completed the previous week as a gasser in sand at 1,003-06 ft.

In Starr County Sun Oil Co. staked location for 2 Saenz in the Santos Bazan Survey 80, about 1,700 ft. north of the company's 1 Saenz, completed the previous week as the discovery well of a new Frio-Vicksburg field. The discovery well is producing from perforated casing at 5,478-81 ft., and is flowing 70.7 bbl. per day through 7/64-in. choke.

Texas 2 Armstrong, 1 mile south of the Gutierrez field, Jim Hogg County, recovered salt water on a drill-stem test in sand at 3,679-84 ft. and the hole has been plugged back and preparations are being made to complete as a gas well in the 3,200-ft. sand. The well is about 1,800 ft. east of the company's 1 Armstrong, a distillate producer completed several months ago.

In the Balcones fault-line zone, and located in Maverick County, Wellington Oil Co. 1-A J. M. Chittim, completed in June 1938 as a gas well at a plugged-back depth of 5,503 ft., is showing promise of opening crude production. During the week the well started building up pressure between the 8¼-in. casing set at 1,445 ft. and the 5½-in. casing which was cemented at 5,481 ft. The operators opened the valve between the two strings of casing to bleed off the pressure, and the well flowed a 2-in. stream of 39.7-gravity oil for 1 minute before it was shut in. It is believed that the oil is coming from the section of black lime between the Georgetown and Edwards lime which had some porosity and carried an oil odor. It has not been determined whether this is a new field or an extension to the old Chittim field where several wells are producing gas from the Glen Rose lime.

(Continued on Page 80)

Discover Viola Lime Pool Near Whelan Field, Barber County

By DAL DALRYMPLE

VIOLA lime was proven productive in Barber County, Kansas, at Derby Oil Co. and Crow Drilling Co. 1 Hancock, C SE SE 10-32-12w, about 1 mile southwest of the town of Medicine Lodge and 4 miles southwest of the Whelan pool. It flowed 50 bbl. of 43-gravity oil from the lime topped at 4,582 ft. Production in the Whelan pool is from Mississippi chat.

The discovery well topped Kansas City lime at 3,745 ft., Mississippi 4,307 ft., had a good showing of oil and gas at 4,313-20 ft., a slight showing of oil at 4,338-52 ft., had a trace of Misener sand at top of Viola, showing of oil at 4,583-85 ft., Simpson zone 4,679 ft., Arbuckle lime 4,776-4,840 ft., total depth, had salt water at 4,778-80 ft., set 4¼-in. pipe at 4,799 ft. and perforated at 4,578-87 ft. After acidizing with 4,000 gal. it flowed from 10 to 12 bbl. of oil every 3 hours.

C. L. Carlock's 1 Karber, W½ NW NW 7-19-10w, discovery well in eastern Barton County and 1 mile west of the Rick pool in Barton County, was acidized with 3,000 gal. and pumped 380 bbl. in 7¾ hours from Arbuckle lime at 3,343-50 ft., total depth. It topped Lansing lime at 3,027 ft., had slight showings of oil and based the Kansas City zone at 3,290 ft. The new area may be classed as an extension of the Rick pool.

New Kansas wildcats include J. W. Sheridan 1 Reschke, W½ SW SW 18-27-13w, about 5 miles southwest of the Iuka pool in Pratt County. Location is on a block of 400 acres on an Atlantic Refining Co. farmout. Nearby leaseholders include Amerada Petroleum Corp., Westgate-Greenland Oil Co. and Mutual Oil & Royalty Co. The area has been checked by seismograph.

E. P. Polcyn and Stearns Drilling Co. 1 Witt, S½ NE SW 28-12-16w, is a new wildcat location between the Blue Hill and North Victoria pools in Ellis County.

H. V. Elwell started a Rice County wildcat at 1 Goodwin, SW SW SW 2-18-8w. It is north of the Geneseo pool and east of the Edwards pool.

Jerry Ladd and George Vincent's wildcat in Nemaha County, northeastern Kansas, the 1 Achton, CSL SE NW 12-4s-14, set 10-in. pipe at 1,196 ft. and was drilling ahead below 1,750 ft. in dry hole. Water found at 1,140-69 ft. was shut off.

FIELD COMPLETIONS

Barton County

Bloomer field: Transwestern et al 1 Myers . . . . . E½ NW NE 13-17-11w
T.D. 3,308 ft. in Arbuckle, potential 3,000 bbl.
Kraft field: Texas 1 Burmeister . . W½ SW SW 2-17-11w
T.D. 3,308 ft. in Arbuckle, potential 3,000 bbl.
West Prusa area: Shell 1 Redetzke . . . . . NE NE SE 19-16-11w
T.D. 3,364 ft., dry.
Silica pool: Texas 4 Petz . . . . . S½ SE SE 7-20-11w
Pumped maximum allowable of 3,000 bbl. from Arbuckle at 3,298-3,323 ft., T.D.
Gulf 5 Howard . . . . . W½ E½ SW 8-20-11w
Pumped 206 bbl. oil and 18 bbl. water in 8 hr., initial potential 624 bbl., 41.2 gravity, Arbuckle 3,294-3,336 ft., T.D.
Lario O. & G. 5-B Zahorsky . . W½ SE NE 23-20-11w
Maximum allowable potential of 3,000 bbl. after hole filled with oil in 1 hr., Arbuckle 3,262-73 ft., T.D.
Trapp pool: Cities Service 6 Bauman . . . . . C W½ E½ SW 6-16-13w
Maximum allowable 3,000 bbl., Arbuckle 3,334-44 ft., T.D., 2,500-gal. acid treatment.

Butler County

Brandt pool: Adair & Morton 13 Brandt . . . . . N½ S½ 15-28-7
Pumped 238 bbl. in 8 hr. from Mississippi topped at 2,707-45 ft., T.D., initial potential 714 bbl.
Douglas pool: Simpson Oil 1 Lessman . . . . . NW NE NW 20-29-4
Pumped 50 bbl., Lansing 1,855-1,904 ft., T.D.

Cowley County

Couch pool: Ryan Consolidated 2 Hunsacker . . . . . NE SW NE 13-30-5
Pumped 244 bbl. in 8 hr., initial potential 732 bbl., Bartlesville 2,804-66 ft., T.D.
Ryan Consolidated 3 Hunsacker . NW NW NE 13-30-5
Flowed 120 bbl. oil in 1 hr. after shut in several days, initial potential 1,458 bbl., Bartlesville 2,797 2,847 ft., T.D.
Ryan Consolidated 2-A Couch . . . NE NW SE 13-30-5e
Flowed 536 bbl., T.D. 2,821 ft. in Bartlesville.

Ellis County

Burnett pool: Wentz 1 Riddler . SL SW SW 1-11-18w
Swabbed 49 bbl. in 1 hr., potential 2,464 bbl., Arbuckle 3,474-91 ft., T.D. 3,501 ft.
Phillips 8 Peavey . . . . . SL SE SE 13-11-18w
Pumped 10 bbl. per hr. after 1,000-gal. acid, Arbuckle 3,407-17 ft., T.D.
Walter pool: Lario O. & G. 1-E Walter . . . . . NL SW NW 2-12-18w
Dry, T.D. 3,718 ft., Lansing 3,389 ft., Arbuckle 3,717 ft., Topeka 3,115 ft.

Ellsworth County

Stoltenberg area: Phillips 2 Hagy . . . . . EL NW SW 16-16-10w
Pumped 18 bbl. per hr., rated maximum potential 3,000 bbl., Arbuckle 3,376-84 ft., T.D.
Bloomer field: Transwestern et al 4 Disque . . . . . W½ NW SE 32-17-10w
T.D. 3,272 ft. in Arbuckle, potential 2,616 bbl.

Greenwood County

Severy pool: Church & Chambers 1 Arnold . . . . . SW NW SE 8-28-11e
T.D. 1,233 ft., dry.
H. Gillot et al 1 Dove . . . . . NW NW NE 17-28-11
T.D. 1,230 ft., pumped 18 bbl.
Reed et al 2 Blevins . . . . . SW NW SE NE 17-28-11
T.D. 1,225 ft. in Kansas City, pumped 12 bbl.
Thrall pool: Marylyn Oil 1-A Gray . NW SW NW 24-24-9
Dry, T.D. 2,243 ft.

Jefferson County

McLouth area: W. W. Stark 3 Dark C NW NW 4-10-20
Gaged 9,400,000 cu. ft. gas daily.

Leavenworth County

McLouth area: McLaughlin 1 Ragan C NW NW 3-10-20
Estimated 4,860,000 cu. ft. of gas from Bartlesville sand at 1,412 ft. and 1,700,000 cu. ft. daily from Miss. at 1,450 ft., T.D. 1,455 ft.

McPherson County

Bornholdt pool: Sunray 2 Pearson . . . . . W½ NW NE 18-20-5w
Pumped 70 bbl. in 8 hr., potential 209 bbl., Miss. 3,361-88 ft., T.D.
Tulsa Oil Corp. 2 Nelson . . . . W½ SW NE 19-20-5w
Rated 3,000 bbl., maximum allowable, Miss. 3,282-3,330 ft., T.D.
Hartman and Pem Drlg. 4 Swanson . . . . . E½ SE SW 18-20-5w
T.D. 3,330 ft. in chat, potential 3,000 bbl.

Reno County

Wildcat: Dutton et al 1 Green . . . . . SE cor. 8-23-4w
Dry, T.D. 2,629 ft., Topeka 2,233 ft., Lansing 2,622 ft.

Rice County

Chase field: McPherson Drlg. 2 Cramm . . . . . NE SE SW 15-19-9w
Swabbed 118 bbl. in 7 hr., potential 2,379 bbl., Arbuckle 3,206-33 ft., T.D.
McPherson Drlg. 6-A Cramm . . NE NE NW 15-19-9w
T.D. 3,229 ft. in Arbuckle, potential 3,000 bbl.
McPherson Drlg. 2 Cramm . . . . NE SE SW 15-19-9w
Swabbed 118 bbl. in 7 hr., initial potential 2,379 bbl., Arbuckle 3,186-3,200 ft., T.D.
Keesling area: Colorado Pet. 1 Keesling . . . . . E½ NE NW 10-20-9w
Pumped 130 bbl. in 8 hr., initial potential 390 bbl., 43 gravity, Arbuckle 3,206-33 ft., T.D.

Rooks County

Burnett pool: Bay Pet. 2-A Kempe . . . . . EL SE SW 31-10-17w
Made maximum allowable 3,000 bbl., Arbuckle 3,623-27 ft., T.D.
Laton pool: Broadview Oil 7 Livingood . . . . . SL NW NW 11-9-16w
Made initial potential of 2,810 bbl. from Lansing pays at 3,165-73 ft. and 3,199-3,206 ft., T.D. 3,219 ft.

Russell County

Hall-Gurney pool: Cities Service 3 Graham . . . . . CNL SW NW 28-14-13w
Pumped 239 bbl. in 8 hr., potential 718 bbl., Lansing 2,874-2,975 ft., T.D. 3,164 ft.
Skelly 14 Opdycke . . . . . CSL NW NW 32-14-13w
Pumped 541 bbl. in 8 hr., potential 1,624 bbl., Lansing 2,845-2,943 ft., T.D.
Helmerich & Payne 4 Boxberger . . . . . SW SW NE 21-14-14w
Pumped 875 bbl. in 8 hr., potential 2,625 bbl., Lansing 3,024-3,111 ft., T.D., acidized with 7,000 gal.
Alva Billings 6-A Herbel . . . SE SW SW 24-14-14w
T.D. 3,168 ft., potential 2,240 bbl.
Mahoney pool: Jones Brothers 2 Mahoney . . . . . C N½ SW SW 8-14-12w
T.D. 2,996 ft. in Kansas City; potential 1,149 bbl.
Trapp field: R. H. Shields 4 Rogg CSL SE NW 9-15-13w
Pumped 760 bbl. in 8 hr., potential 2,281 bbl., Lansing 3,021-25 ft., T.D. 3,043 ft.
W. I. Southern, Inc. 2 Hinderliter . . . . . SW SW NW 33-15-13w
Potential 1,967 bbl.; Arbuckle 3,339-41 ft., T.D.

Sedgwick County

Schulte area: Bartlett & Simpson 1-A Schmitz . . . . . E½ SE SW 5-28-1w
T.D. 3,798 ft., dry.

Stafford County

Wildcat: Shelby O. & G. 1 Blackburn . . . . . E½ SE NE 13-24-12w
Dry, T.D. 3,885 ft., Topeka 2,960 ft., Lansing 3,450 ft., Viola 3,859 ft.
Wildcat: W. W. W. Drlg. 1 Boyd . . . . . W½ SW SW 4-21-14w
Dry, T.D. 3,654 ft., Topeka 3,133 ft., Lansing 3,330 ft., Viola 3,562 ft., Simpson shale 3,577 ft., Simpson sand 3,602 ft., Arbuckle 3,644 ft.
Snider pool: Cities Service 1-C Smith . . . . . SW SW NE 9-21-11w
T.D. 3,458 ft., dry.
Zenith field: Skelly 3 McNickle . . . . S½ NW SE 2-24-11w
T.D. 3,750 ft. in Viola, potential 3,000 bbl.

WILDCAT REPORTS

Barber County

Derby et al 1 John Hancock . . . . C SE SE 10-32-12w
Viola 4,582 ft., shots 4,578-87 ft., acidized, flow 12 bbl. oil every 3 hr., gravity 43.
Barbara Oil 1 Angell . . . . . C NE SE 10-33-14w
Base Mississippi 4,981 ft., Viola 5,048 ft., T.D. 5,078 ft., 150 ft. oil in hole, running 5-in. casing.

Douglas County

Douglas County O. & G. Synd. 2 Gago NE NE SE 11-13-20
Set 8-in. casing 534 ft.

Graham County

R. W. Shields 1 Paxson . . . . . NE cor. 11-8-24w
Drilling 883 ft.

Greenwood County

Ward McGinnis 1 Sharp . . . . . C SW SW 9-28-12
S.D. 1,155 ft.
McKnab et al 1-A Hess . . . . . NE NE NW 5-22-11
Drilling 1,800 ft.

Marion County

H-L-N Oil 1 Shields . . . . . C S½ SE SE 19-17-4
Set 8-in. casing 1,856 ft., drilling 2,075 ft.
Harrington & Loriaux 1 Belton . . . . SE SE NE 30-17-4
T.D. 2,420 ft., P.B. and drilled cement to 2,417 ft., pumped 15 bbl. oil and 300 bbl. water per day.

McPherson County

F. S. Williams 1 Henne . . . . . SW SW NE 21-17-1w
Underreaming 8-in. casing 2,091 ft.
E. K. Carey Drlg. 1 Coons . . . . C W½ SW SW 13-19-1w
T.D. 3,425 ft., Mississippi 2,896 ft., P.B. 2,917 ft., shots 2,897-2,910 ft., est. 3,000,000 cu. ft. gas.

Nemaha County

Bumpus et al 1 Achten . . . . . CSL SE NW 12-4-14
Drilling 1,732 ft.

Pratt County

Marylyn Oil 1 Jackson . . . . . CEL NE NW 1-27-13w
T.D. 4,342 ft., no shows.

Rice County

Carlock et al 1 Karber . . . . . C W½ NW NW 7-19-10w
Arbuckle 3,343-50 ft., T.D., acidized with 3,000 gal., pumped 380 bbl. oil in 7¾ hr.
Hess et al 1 Cole . . . . . SE SE NE 31-20-6w
Drilling 555 ft.

Rooks County

Gulf 1 Bruton . . . . . CEL SE NE 23-8-17w
Drilling 3,365 ft.

Russell County

J. R. Robertson et al 1 Radke . C S½ SE SW 18-15-14w
Lansing 3,170 ft., drilling 3,290 ft.

Nebraska Operations

ST. JOSEPH, Mo., Oct. 21.—Diminishing pressure due to 10-acre offset drilling in the Falls City, Nebraska, pool is causing one well after another to go on the pump. The bulk of offset drilling has been in the NW and NE of 20-1n-16e. Production is found to the south in Section 29, though development there has not been as fast. In C SE NE 29-1n-16e, the Skelly Oil Co. is drilling 1 Prichard, a well that will be significant in regard to development to the south. To the southwest of the pool, in NE NE 30-1n-16e, Black Gold Operating Co. 1 Conklin was running low on structure, topping Hunton lime at 2,579 ft.

Important developments during the week in Richardson County, Nebraska, were: Pawnee Royalty 3 Sandrock, NW SE NE 20-1n-16e, flowed into tanks at the rate of 840 bbl. daily following acidization with 2,000 gal. The company's 4 Sandrock, CSL N½ S½ NE 20-1n-16e, swabbed 30 to 35 bbl. an hour from Hunton lime topped at 2,261 ft. and the 5 Sandrock, C S½ N½ 20-1n-16e, was drilling near pay lime. Pawnee Royalty 2 Bucholz, C NW NW 17-1n-16e, offset to its No. 1 Boice discovery well, was nearing Hunton lime.

Harry Harper 2 Sibbernsen, SE NW NW 20-1n-16, which topped 6 ft. of Misener sand at 2,216 ft. and drilled into Hunton to a total of 2,245 ft., pumped 720 bbl. daily after acidizing with 4,000 gal. Harper 3 Sibbernsen, SW NE NW 20-1n-16e, offset to Pawnee Royalty 1 Sandrock, flowed naturally at the rate of 300 bbl. daily from Hunton topped at 2,221 ft. A pump was to be installed. Harper's location for 4 Sibbernsen is SW NW NW 20-1n-16e.

Skelly 2 Wallraff, C SW SE 20-1n-16e, north offset to R. L. Campbell 1 Dora Schock, topped Hunton at

(Continued on Page 69)

By
NEIL WILLIAMS

Favorable Indications Found In St. Mary Parish Test

NEW ORLEANS, La., Oct. 21.—E. G. Bateman et al 1 Foster, a wildcat located just south of the town of Franklin, St. Mary Parish, was holding the attention of operators in the Louisiana Gulf Coast as an electrical survey and sidewall cores showed favorable indications. The hole is bottomed at 9,930 ft. and the operators are preparing to drill deeper after making an electrical survey which showed 7 ohms resistivity on the normal curve at 9,351-58 ft. and 5 ohms resistivity on the third curve. The driller's log showed the sand section from 9,750-80 ft., and sidewall cores in this section showed as much as 2.5 per cent saturation by volume. The well is situated in 38-15s-9e, about 8 miles south of the Charenton field.

Distillate production from a new horizon extended production in the Erath field, Vermilion Parish, about ½ mile west as Humble Oil & Refining Co. 1 Vermilion Parish School Board flowed at the rate of 66.48 bbl. of distillate per day through a ⅛-in. choke. Tubing pressure was 3,250 lb. and the gas volume was estimated at 648,000 cu. ft. per day. The well was drilled to a total depth of 11,676 ft. and production is from perforated casing at 10,151-54 ft. The discovery well, Texas 1 Vermilion Parish School Board, was completed for a small producer from sand at 11,300 ft.

Gueydan Field Outpost

On the south flank of the Gueydan field, and approximately 3,300 ft. south of production, Fohs Oil Co. 1 Mulvey Irrigation Co. is bottomed at a total depth of 9,961 ft. and the company is preparing to plug back and test the sand section at 9,230-70 ft. where an electrical survey is reported to have shown indications of production. This is the second deep test drilled on this salt structure being located southeast of a deep test drilled by Pure Oil Co.

Texas 5 State, located on the Coon Point prospect, Terrebonne Parish, continues to attract attention as the well attempted to blow out during the week. Seven-inch casing was cemented at 10,399 ft. and the well started to blow gas and mud after the hole had been drilled to a total depth of 10,439 ft. This prospect is located in Caillou Bay and the structure was proven a salt dome in 1938. The present test is the deepest test ever drilled in the area.

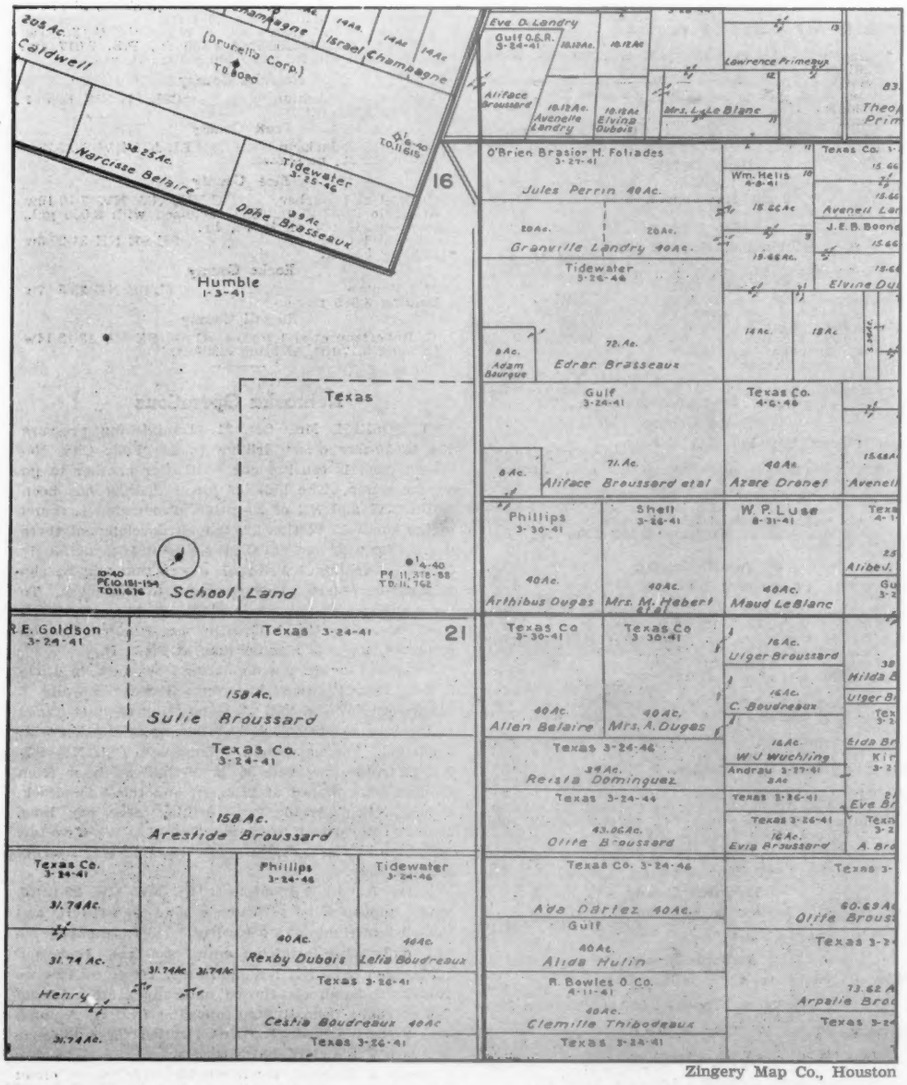
Pan American Production Co. 2 Mills, about 1,300 ft. west of the discovery well of the La Place field, St. John the Baptist Parish, has been plugged back from a total depth of 9,050 ft. to 8,680 ft. and the well is scheduled to be tested through perforated casing at 8,750-58 ft.

South Crowley Field

In the South Crowley field, Acadia Parish, and located as an east offset to the discovery well, Humble Oil & Refining Co. 2 Leger is being retested after it flowed at the rate of 30 bbl. of fluid per hour of which 50 per cent was oil and the balance salt water. The well was drilled to a total depth of 9,072 ft. and is testing a deeper sand at 8,917-25 ft. about 1,300 ft. below the discovery pay. Only slight showings were reported logged in the original pay.

Continental 3 Calcasieu National Bank, completed the previous week as a distillate producer to extend production in the South Roanoke field, Jefferson Davis Parish, has been killed and the company is drilling deeper in search of a new sand. The well was completed in the regular pay at 9,875-9,910 ft., and flowed 122 bbl. of distillate per day through a ⅛-in. choke.

In the Iowa field, Calcasieu Parish, Shell 32 Heyd, a south offset to the deep-sand discovery well, is bottomed at 8,196 ft. where 7-in. casing was cemented and the well is scheduled to core for the 8,200-ft. sand by the end of the week. Magnolia 14 Wait topped the Frio at 8,193 ft. and is coring ahead in shale below 8,233 ft.



Zingery Map Co., Houston

Plat of the Erath field, Vermilion Parish, showing extension producer of Humble Oil & Refining Co. 1 Vermilion Parish School Land

LOUISIANA GULF COAST COMPLETIONS

Avoyelles Parish

Eola field: Amerada 2 Beverly, 373 bbl., ¼-in. choke, perf. casing 8,528-61 ft., T.D. 8,570 ft.

Beauregard Parish

Neale field: Atlantic 3 Ira Spiers, 281 bbl., ¼-in. choke, perf. casing 8,350-71 ft., T.D. 8,431 ft.

Cameron Parish

Sweet Lake field: Pure 19 Stanolind Oil & Gas Co., 389 bbl., 11/64-in. choke, perf. casing 6,346-74 ft., T.D. 7,391 ft.

West Hackberry field: Superior 4 Vincent, 295 bbl., 11/64-in. choke, perf. casing 8,022-72 ft., and 7,953-96 ft., T.D. 8,600 ft.

Iberia Parish

Fausse Point field: Sun 2 Planters Lumber Co., dry, T.D. 6,519 ft.

Iberville Parish

Bayou Blue field: Markley and Crosby Drilling Co. 5 Baiste Cooperage Co., 146 bbl., ¼-in. choke, sand 1,410-25 ft., T.D. 1,427 ft.

Choctaw field: Louark Production Co. 9 Gay, 100 bbl., ⅛-in. choke, perf. casing 5,470-90 ft., T.D. 6,318 ft.

Lafourche Parish

Golden Meadow field: St. Mary Oil Co. 2 Chouest Unit No. 6, 162 bbl., 12/64-in. choke, perf. casing 5,150-60 ft., T.D. 5,500 ft.

Texas 14 L. L. & E.-Golden Meadow, 302 bbl., 9/64-in. choke, perf. casing 7,900-50 ft., T.D. 10,910 ft.

St. Landry Parish

Port Barre field: Texas 30 Botany Bay Lumber Co., 665 bbl., ¼-in. choke, perf. casing 6,076-6,100 ft., T.D. 6,144 ft.

St. Martin Parish

Anse La Butte field: W. W. Hawkins 1 Bullock, dry, T.D. 3,933 ft.

St. Mary Parish

Charenton field: Pan American Production Co. 26 Veeder, dry, T.D. 2,716 ft.

LOUISIANA GULF COAST DRILLING REPORT

Avoyelles Parish

W. C. Brock 1 Snowden, NE of Marksville, 22-3n-5e, drilling shale 2,810 ft.

East Baton Rouge Parish

F. W. D. Oil Co. 1 Aldrich, 3 mi. SW of University field, 10¾-in. casing 1,330 ft., waiting on cement.

Iberville Parish

Humble 3-B Wilberts, Bayou Des Glaize salt dome, drilling sandy shale 6,800 ft.

Jefferson Parish

Titanic Oil Co. 1 Marrero, 2-13s-23e, drilling shale 7,502 ft.

(Continued on Page 77)

Chestnut Ridge Oriskany Test Increases Gas Production

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Oct. 21.—On Chestnut Ridge in South Union Township, Fayette County, Pennsylvania, New Penn Development Co., William E. Snee et al topped the Oriskany sand at 6,775 ft. in the 1 Summit Hotel (Heyn) which is being deepened from the gas pays in the chert beds in the Onondaga lime. An additional 500,000 cu. ft. of gas has been struck in the Oriskany sand with the tools now 18 ft. in that member. This places the lime section 178 ft. thick. With a surface elevation of 2,316 ft. the Oriskany sand was subsea 4,459 ft. Drilling is being continued.

During the past week in the lower eastern fields 24 operations were complete of which 20 were gas wells and 4 oil producers with a daily initial of 91 bbl.

SOUTHWEST PENNSYLVANIA

In South Union Township, Fayette County, Peoples Natural Gas Co. reached 6,147 ft. in 2 Piedmont Coal Co. and lost the bailer. It is within 100 ft. of the top of the Onondaga. In their No. 3, the present depth is 2,425 ft. In North Union Township, Wasson et al are drilling 2 J. H. Sorg at 5,750 ft.

In Maryland, New Penn Development Co. et al are still in trouble with the test on the Humberson farm in Garrett County on the Accident dome. With a bailer stuck in the hole, the cable has now worn through the surface casing and let water in the hole.

Armstrong County

Valley Township: Local Company 2 W. L. Pierl, 50,000 cu. ft. gas, Bradford sand, T.D. 3,210 ft.

Clarion County

Limestone Township: Peoples 2 Mrs. M. G. Brocius, 123,000 cu. ft. gas, Speechley and Tiona sands, T.D. 2,946 ft.

Monroe Township: Owens-Illinois Glass 1 J. C. Heinrick, 60,000 cu. ft. gas, Bradford sand. Show oil in Tiona sand. Tiona sand shot now fishing. T.D. 2,871 ft.

Greene County

Center Township: J. B. Orndoff 3 Mattie I. Scott, 250,000 cu. ft. gas; Fifty Foot sand 2,896-2,972 ft.; gas 2,965-67 ft.; T.D. 3,000 ft.

Whiteley Township: Carnegie 1 Murdock, 119,000 cu. ft. gas; Fourth sand 2,808-48 ft.; gas 2,815-19 ft.; Bayard sand 2,988-3,000 ft.; gas 2,991-96 ft.; Bayard stray 3,015-26 ft.; gas 3,016-18 ft.; T.D. 3,098 ft.

Indiana County

Washington Township: Peoples 1 Calvin Cribbs, 21,000 cu. ft. gas, Bradford sand, T.D. 4,225 ft.

White Township: T. W. Phillips 1 Martha B. Campbell, 179,000 cu. ft. gas, Speechley sand, T.D. 3,384 ft.

DRILLING

Armstrong County

Bethel Township: T. W. Phillips 1 Mrs. H. E. Gilchrist, 200 ft.

Cowanshannock Township: Equitable 1 J. H. Hoover, building rig.
Peoples 1 Michael Miketa, 3,150 ft.
Peoples 1 Jay Kough, 3,267 ft.

East Franklin Township: V. F. Leithold et al 1 John Roofner, rig.

Kiskiminitas Township: Chestnut Ridge Gas 2 E. J. Shirey, 670 ft.
Shaw & Townsend 1 Michael Zitterberg, 1,100 ft.

Kittanning Township: Local Company 1 G. A. Scholl, 2,335 ft.
Local Company 1 B. H. Schwerengost, 945 ft.
Equitable 1 David Shoemaker, location.

Plum Creek Township: Shelocta 1 Amos Boyer, 2,600 ft.

Wayne Township: Watson et al 2 W. D. McIntyre, 3,320 ft.
Penn Wayne Gas 2 Ed. Clever, 1,915 ft.
Daniel Sowers 2 William Rupp, 480 ft.

Clarion County

Piney Township: Frank Shreffler et al 7 Clarion County Home, 1,100 ft.

Porter Township: Climax Brick 1 Samuel McMaster, 1,980 ft.
Gourley Gas 2 Andrew Gourley, location.

Fayette County

German Township: J. H. Carnell 1 Albert Lily, building rig.

Nicholson Township: Greensboro Gas 1 Frank Mozo, 565 ft., S.D.
Duquesne Gas 1 George Moher, 1,276 ft.

South Union Township: Eberly et al 1 Mary Huhn, 1,130 ft.

Greene County

Aleppo Township: Peoples 1 S. N. Rinehart, 1,975 ft.

Jackson Township: Equitable 1 Ocie M. Kerr, 1,345 ft.
Brummage et al 1 Frank Gilbert, 1,990 ft.

Monongahela Township: Harry Scott et al 1 Silas Provins, 20 ft., S.D.

Richhill Township: Natural Gas Co. W. Va. 2 Harry Coffield, 2,200 ft.

Whiteley Township: Waynesburg Home Gas 2 A. J. Morris, 1,605 ft.
Greene County Gas 1 James Orndoff, 1,651 ft.

Indiana County

South Mahoning Township: John Wray et al 2 James Lukehart, 3,500 ft.
T. W. Phillips 1 Thomas Hoover, 2,940 ft.

Washington Township: T. W. Phillips 1 C. M. Brewer, 3,195 ft.
T. W. Phillips 1 Miles Roof, 1,320 ft.
T. W. Phillips 2 Sadie Anderson, 2,845 ft.

Washington County

Amwell Township: Carnegie 2 W. C. Horn, 2,555 ft.
Chivers et al 2 James Bristor, 840 ft.

North Franklin Township: E. H. Tague 17 J. H. Moore, rigging up.

South Franklin Township: H. V. Sprowls et al 2 Clarence Vankirk, rigging up.
South Penn Oil 3 Piedmont Coal, rigging up.

South Strabane Township: Victor D. Behm et al 1 J. S. Smith, deepening from 1,911 ft. now at 2,070 ft.

Morris Township: South Penn Oil 1 Oliver Booth, rig standing.

Nottingham Township: Beedle & Clark 1 Pittsburgh Coal, 1,870 ft., S.D.

Somerset Township: Carnegie 1 Elizabeth Nicholl, 580 ft.

West Bethlehem Township: J. D. Amos 1 Frank Myers, location.

Westmoreland County

Allegheny Township: Apollo Gas 2 Sadie J. Anderson heirs, rigging up.
Hyde Park Foundry 2 Andrew Grinder, 1,875 ft.

Bell Township: Peoples 1 John McCreay, 2,225 ft.

Derry Township: Latrobe Steel 1 Keystone Coal, 2,635 ft.

WEST VIRGINIA

In Harrison County, West Virginia, the deep rotary test of the Hope Natural Gas Co. on the C. S. Gribble farm in Grant district is drilling at 7,346 ft. or 279 ft. below the top of the Huntersville chert (Corniferous).

In Jackson County, Columbian Carbon Co. is drilling at 1,415 ft. in the wildcat on the P. F. Riggs farm and 280 ft. in the test on the F. F. Stracher farm. Both are in Ravenswood district.

Cabell County

Guyandotte district: Lusher & Lusher 2 Gatewood Brothers, 25 bbl., Big lime 1,075; oil 1,180-87 ft.; T.D. 1,188 ft.

Clay County

Henry district: Wallback Oil & Gas 1 Mary Hanshaw, drilled down 5 bbl. Injun sand, T.D. 1,950 ft.

Jackson County

Ravenswood district: Boggess Drilling 1 H. L. Tallman, 10 bbl. Berea, T.D. 2,434 ft.

Lincoln County

Union district: Roy & McComas 3 Oliver Adkins, drilled deeper, 73,000 cu. ft. gas; started deepening 2,291 ft.; Brown shale 3,160-3,525 ft.; T.D. 3,525 ft.

Mingo County

Warfield district: Marrowbone Gas 2 W. H. Waldron, 370,000 cu. ft. gas; Big lime 1,234-1,422 ft.; Berea 1,965-2,007 ft.; Brown shale 2,383-2,865 ft.; gas 2,705, 2,775, 2,833 ft.; T.D. 3,192 ft.

Pleasants County

Lafayette district: H. F. Simonton 1 fee, 250,000 cu. ft. gas, Injun sand, T.D. 1,925 ft.

Putnam County

Curry district: Summit Gas 2 John Burdette, 292,000 cu. ft. gas; Big lime 1,503-1,687 ft.; gas 1,654-60 ft.; T.D. 1,689 ft.; R.P. 435 lb.

Teays Valley district: Teavee Oil & Gas 1 Hodge Brothers, 1,200,000 cu. ft. gas; Salt sand 990 ft.; gas 992-94 ft.; T.D. 998 ft.; R.P. 425 lb. in 12 hr.

Roane County

Harper district: W. B. Hughes 1 C. B. Bradley, 15 bbl., Salt sand, T.D. 1,773 ft.

Upshur County

Meade district: French Creek Oil & Gas 1 K. H. Jones, 53,000 cu. ft. gas; Gordon sand 2,115-82 ft.; gas 2,164-73 ft.; T.D. 2,275 ft.

Wayne County

Lincoln district: Huntington Oklahoma Gas Co. 7 Floyd Brewer, 450,000 cu. ft. gas; Big lime 1,340-1,516 ft.; Big Injun 1,516-40 ft.; Berea 2,040-2,137 ft.; Brown shale 2,150-2,930 ft.; gas 2,641-2,651 ft.; T.D. 2,937 ft.

ORISKANY GAS FIELDS

Jackson County

Ripley district: Cherrington Corp. 1 W. T. Boggess et al, 7,000,000 cu. ft. gas; Corniferous 4,855-4,970 ft.; Oriskany 4,970-5,013 ft.; gas 4,975-4,990 ft.; gas 5,002-12 ft.; R.P. 1,200 lb.

Columbian Carbon 1 J. W. Weatherholt, 5,000,000 cu. ft. gas; Corniferous lime 5,125-5,232 ft.; Oriskany 5,232-5,315 ft.; gas 5,237-56 ft.; T.D. 5,316 ft.

Washington district: United Fuel 4873 D. C Milam et al, 10,200,000 cu. ft. gas; Corniferous lime 4,930 ft.; Oriskany 5,038 ft.; gas 5,041-55 ft.; R.P. 1,175 lb.; T.D. 5,055 ft.

United Carbon 6 Elizabeth Ward Perkins, 6,700,000 cu. ft. gas; Corniferous lime 5,193-5,316 ft.; Oris-

(Continued on Page 88)

New Pool in Prospect Near Music Mountain

BRADFORD, Pa., Oct. 21.—The so-called Turnip Run well on the John W. Becker tract, on the lower end of the Music Mountain pool, which may mean another pool in that area, has been capped after being drilled in and the production has not been determined. The well was variously reported to be flowing at 50 bbl. an hour when the sand was topped and at 120 bbl. an hour when drilled 2 ft. into the Sliverville sand, which was reached at 1,710 ft., but no actual gage of production has been made.

Meanwhile the lease owners, L. C. Wright, Del Moody, Adolph Schorman and Fred C. Tapp, are drilling two other wells. One, which is 1,300 ft. due north of the Turnip Run well, is down to 900 ft. and another, 320 ft. west of the Turnip Run well, is drilling at 250 ft.

It is believed that the Turnip Run well got the Sliverville sand and that a new pool has been located. It was pointed out that two wells drilled about a year ago just inside the east line of the warrant had a rock pressure of 535 lb. while wells on the lower end of the Music Mountain pool are understood to be down to about 240 lb. These two wells have been shut in and are believed to have a combined potential production of 50 bbl. daily.

Nebraska Operations

(Continued from Page 65)

2,262 ft. and pulled a saturated core. Skelly 1 Prichard, C SE NE 29-1n-16e, east offset to 1 Dora Schock, was drilling. Kirk & Ross are moving in to drill 1 Prichard, NW SE SE 20-1n-16e, south offset to 1 William Schock drilled by R. L. Campbell.

Jackson & Rust 1 Eickhoff, NE NW 4-2n-16e, wildcat in Richardson County, topped Hunton lime at 2,508 ft. and was waiting on acidization.

E. J. Shaffer 1 Koepke, C SE NW Section 29-3n-16e, north offset to the I. T. I. O. 1 Shaible-Kuttler producer, was a dry hole, abandoned in Hunton at 2,561 ft. Thus far the I. T. I. O. well is the sole producer in the Shubert area of Richardson County.

The I. T. I. O. pulled three Hunton lime cores in its 1 Bankers Life, NE SE 3-2n-15e, Richardson County, after topping the lime at 2,418 ft., elevation 978 ft. Some oil showed in the third core.

Nemaha County

Frank Engles 1 Wheeler ..... NE cor. 9-4-14
Lansing 1,040 ft., set 8-in. casing 2,105 ft., drilling 2,020 ft.

Black Gold 1 Allen ..... C SE SW 16-4-15
Dry, Hunton 2,682-2,713 ft., T.D.

Clampitt et al 1 Lambert ..... NE NE SW 26-4-15
Dry, Hunton 2,638 ft., cored to 2,714 ft.

Bow & Arrow Oil 1 Shriefer ..... C N½ NE SW 20-5-14
Set 8-in. casing 1,475 ft., T.D.

Bow & Arrow 1 Wrightman ..... C W½ SW NW 36-6-14
Fishing 800 ft.

Richardson County

Forest City Basin 1 Windle-Dodge ..... SE NE SE 3-1-15
Base Kansas City 1,225 ft., set 8-in. casing 1,610 ft., drilling 2,240 ft.

McIntyre et al 1 Hough-Hill ..... C SE SW 6-1-16
Lansing 734 ft., drilling 750 ft.

I. T. I. O. 1 Bankers Life ..... C NE SE 3-2-15
Lansing 840 ft., Miss. 2,065 ft., drilling 2,147 ft.

Missouri Activity

In Missouri the American Oil & Gas 1 Thompson corrected its log with steel-line measurements. Location is SW SW 20-58n-31w, De Kalb County. Top of Hunton lime is 1,560 ft. and total depth is 1,790 ft. Eight-inch casing was set at 1,753 ft., but was to be lowered for a better shutoff.

Skelly Oil Co. moved its core drill from Atchison County, Missouri, to Fremont County, Iowa, in 67n-42w. The I. T. I. O. also moved its core drill from Atchison County into Iowa.

Shallow drilling continues in Caldwell County and there are a few other active tests in Missouri.

De Kalb County

A & W Oil & Gas 1 Pickett ... NW NW SE 13-57-32w
Building rig.

American O. & G. 1 Thompson .. C SW SW 30-58-31w
Drilling 1,780 ft.

Holt County

Flory & Kilby 1 Meyer ..... SE NE NW 27-62-38w
Drilling.

Knox County

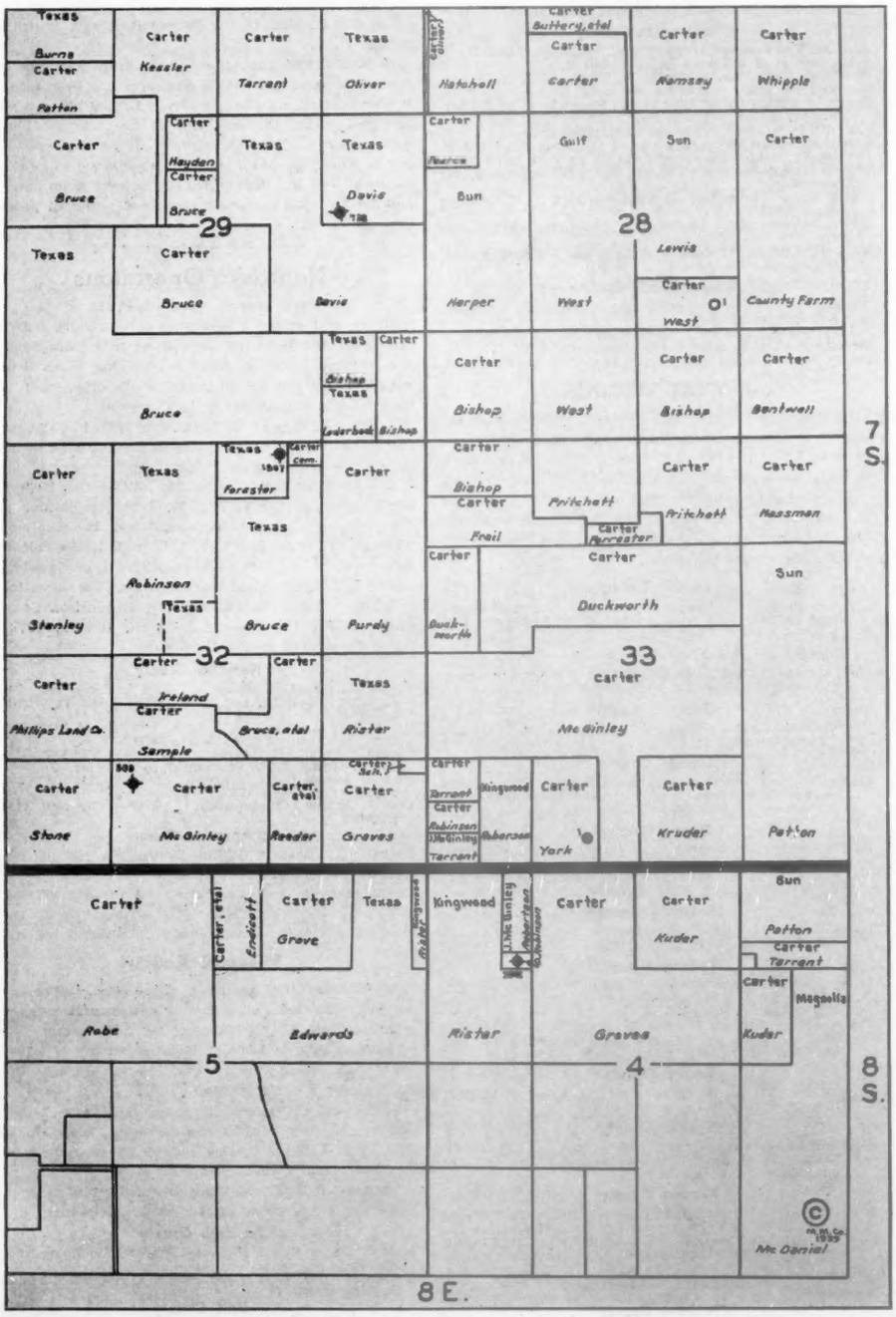
Harris & Holmes 1 Newkirk ..... NE cor. 11-61-11w
S.D. 300 ft.

By
STAFF CORRESPONDENT

Fourth Producing Horizon Is Found in Gallatin Co. Well

MATTOON, Ill., Oct. 21.—The past week in Illinois was one in which there were a greater than average number of disappointments and at the same time, better than average completions. The wells at Louden and Salem continue to be small, the former field getting seven oil wells with an average initial production of only 55 bbl. and one dry hole. At Salem the eight producers completed averaged 280 bbl. In other parts of the basin there were 40 producers completed with an average daily production of 281 bbl. There were 43 new wells started during the week with 286 wells actively drilling.

The state's two remaining Trenton tests failed to furnish much of interest during the week. B. E. Martin 1 Robinson, 4-2n-1e, in the Sandoval field drilled plug during the week after setting casing on the top of the Trenton. The well was acidized to break up the cement which was plugging the formation without success and was then given a 20-qt. shot. It is cleaning out. Storer 1 Borton, 13-1n-1w, Centralia's second test, is shut down awaiting a shot. Several hundred feet of oil are reported standing in the hole, which appears to be good for a producer.



In Gallatin County, Carter Oil Co. has found four pays in its wildcat, 1 R. M. York. The first was in the Pennsylvanian above 600 ft., the second in the Biehl sand at 1,331-58 ft., the third in the Palestine at 1,699-1,740 ft., and the fourth in the Hardinsburg at 2,176 ft.

Gallatin Wildcat Finds Another Pay

Carter 1 R. M. York, SE SE SW 33-7s-8e, found saturation in the Hardinsburg, making the fourth pay that this wildcat has found productive. First saturation was in Pennsylvanian sand above 600 ft. The next pay was correlated with the Biehl sand at 1,331 ft. The Palestine at 1,699-1,740 ft. was estimated good for 250 bbl. natural, but the operators decided to drill ahead, finding saturation in the Hardinsburg at 2,176 ft.

Recompletions in Salem

Many wells in the Salem field are being worked over, plugged back or drilled deeper as production falls below economic limits. This activity is helping to stem the rapid decline in production in this field but its success is somewhat limited. One major company reported this week the recompletion of 31 wells with an average initial production of only 80 bbl. The toll taken by the wide-open production and wastage of reservoir energy in this field has been very great. The field's record of having passed 107,000,000 bbl. in so short a time may be balanced by an unknown quantity of lost oil which can be recovered only at great expense, if at all. The State Supreme Court's decision outlawing drilling on highway strips would have prevented much of the frenzied drilling that has taken place had it been rendered 2 years ago, or had the state been able to control this drilling with an adequate conservation measure. Now the operators who cleaned up on these strips may find themselves liable for heavy damages for trespass.

ILLINOIS COMPLETIONS REPORT

Bond County

Arrow Drlg. 2 Spindler Inv. . . . SW SW NW 10-6n-2w
Pumped 50 bbl. oil, 10-qt. shot, 1,010-21 ft.

Cent. States 1 Geo. Rich . . . . . NW SE NE 28-6n-4w
Dry, elev. 564 ft., base Pennsylvanian 925 ft., Osage 1,255 ft., Louisiana lime 1,808 ft., Chattanooga 1,825 ft., T.D. 1,971 ft.

Kingwood 1 Hentz . . . . . SW NE NW 18-5n-3w
Dry, Louisiana 2,087 ft., Devonian 2,193 ft., T.D. 2,290 ft.

Clay County

Pure 6 R. B. Moseley-A . . . . . N½ SE SE 4-2n-8e
Pumped 183 bbl. oil, 5,000 gal. acid, McClosky 2,979 ft., T.D. 3,028 ft.

Pure 2 M. E. Mills . . . . . W½ NE SE 29-2n-8e
Pumped 64 bbl. oil, 1,000 gal. acid, McClosky, Fredonia 3,022 ft., T.D. 3,098 ft.

Duncan 3 Skelton . . . . . E½ NW NE 32-2n-8e
Pumped 120 bbl. oil, 6,000 gal. acid, McClosky 3,016-20 ft. and 3,049-53 ft., T.D. 3,061 ft.

Pure 4 M. A. Brissenden . . . . . W½ NW SE 32-2n-8e
Pumped 271 bbl., natural, McClosky 3,048-53 ft., T.D. 3,110 ft.

Pure 1 G. W. Gill . . . . . W½ NW NW 24-2n-8e
Pumped 82 bbl. oil, 5,000 gal. acid, Fredonia 3,046 ft., T.D. 3,140 ft.

Pure 1 H. N. Carey . . . . . NE SW NE 1-1n-7e
Flowed 214 bbl. oil, 5,000 gal. acid, McClosky 2,992-95 ft., T.D. 3,050 ft.

Pure 4 J. W. Barth . . . . . NW NE NW 5-1n-8e
Flowed 812 bbl. oil, 5,000 gal. acid, McClosky 3,035-41 ft., 3,084-90 ft., T.D. 3,110 ft.

Pure 3 H. Gill . . . . . NE NE SW 5-1n-8e
Flowed 536 bbl. oil, 5,000 gal. acid, McClosky 3,030-36 ft., 3,041-46 ft., 3,075-79 ft., T.D. 3,087 ft.

Pure 1 L. Obrecht . . . . . E½ NE SE 8-1n-8e
Pumped 31 bbl. oil and 50 bbl. water, 1,000 gal. acid, McClosky 3,053-50 ft., T.D. 3,090 ft.

Clinton County

B. E. Martin 2 Heinzman . . . . NE NE NW 9-2n-1w
Dry, Devonian 2,908 ft., show of oil 2,973 ft., T.D. 3,005 ft.

Ruwaldt et al 1 H. B. Brefeld . . NE NE NE 30-2n-3w
Dry, Cypress 986 ft., Benoist 1,080 ft., T.D. 1,123 ft.

Max Pray 3 Brameier . . . . . SW SE SW 2-1n-2w
Pumped 28 bbl. oil, 1-qt. shot, Benoist 1,317-20 ft.

Pearson 1 Knolhoff . . . . . NE SE SE 10-1n-2w
Dry, Cypress sand 1,204 ft., Benoist 1,334 ft., T.D. 1,345 ft.

Thompson Drlg. 1 F. Monker . . . SE SE NE 10-1n-2w
Pumped 29 bbl. oil, 4-qt. shot, Cypress 1,173-85 ft.

Santa Fe 3-D Maddux . . . . . SE NW SW 4-1n-3w
Pumped 130 bbl. oil, 4,000 gal. acid, Devonian 2,431 ft., T.D. 2,456 ft.

Newton & Ward 2-D Gross-A . . . . NE SE SW 5-1n-3w

BETHLEHEM Nº 5 STELLITED COUPLING

more than doubles coupling life in crooked, abrasive wells

BETHLEHEM'S new stellited sucker rod coupling is unexcelled for service in crooked, corrosive and abrasive wells. Records in some of the toughest wells in the Mid-Continent field indicate a life at least two to three times that of any other coupling.

In this new coupling inserts of stellite are placed in a row around each end of the coupling. The smooth tops of the inserts are raised slightly above the surface of the coupling and provide the areas of contact with the tubing. These slightly-projecting inserts do not interfere with the flow of oil or the use of fishing tools.

Less Wear on Tubing and Coupling

Much less wear results when the No. 5 Stellited coupling is used. This is the direct result of the low coefficient of friction of the stellite inserts—0.11 to 0.15 for stellite compared with 0.20 or more for steel. Furthermore, the stellite inserts have a glazing effect upon the tube surfaces, which results in lessened wear, in marked contrast to the cutting action of the harder CH&G coupling (Rockwell C-54 hardness compared with C-60 or more).

The raised stellite inserts take the wear and thus prevent loss of the zinc coating on the coupling body. Stellite itself is not easily corroded. A further factor for increased corrosion resistance is that the steel used in stellited couplings is not case-hardened. As a result, the surface is lower in carbon than similar case-hardened surfaces with consequent marked improvement in corrosion-resisting ability.

We strongly recommend the use of No. 5 stellited couplings in bad wells. They wear longer; reduce breakages, kinks and down time; and work to keep up production. No. 5 stellited couplings are made in 5/8-in., 3/4-in., 7/8-in. and 1-in. sizes, box and box type.

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Photograph by Robert Yarnall Richie

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ASHCROFT GAUGES MANNING, MAXWELL & MOORE, INC. BRIDGEPORT CONNECTICUT

Pumped 120 bbl. oil, 1,500 gal. acid, Devonian 2,448 ft., T.D. 2,470 ft.

Crawford County

Bell 1 Kersey . . . . . NE SE NE 1-5n-13w
Dry, Devonian 2,576 ft., McClosky 1,448-70 ft., slight show oil, T.D. 2,805 ft., P.B. to 1,451 ft.
Segar 1 R. Goodwin . . . . . NE NW SW 17-6n-10w
Dry, McClosky 1,525-30 ft., 1,540-45 ft., T.D. 1,590 ft.

Edgar County

H. Dunn 1 Irwin . . . . . NE NW NW 14-14n-14w
Dry, T.D. 495 ft.
Downey & Cain 1 Stark . . . . . NW NW NE 18-12n-13w
Dry, T.D. 597 ft.

Edwards County

Superior 6 M. Woods . . . . . SW SE NW 18-2s-11e
Flowed 600 bbl. oil, 5,000 gal. acid, McClosky 3,145-64 ft.
Tuesday 3 G. J. Works . . . . . SW NE SE 13-2s-10e
Flowed 1,920 bbl. oil, 7,000 gal. acid, McClosky 3,112-23 ft., 3,164-72 ft., 3,181-3,210 ft., T.D. 3,210 ft.
Scott 1 Reed . . . . . SE SE SE 5-2s-7e
Location abandoned.

Fayette County—Louden Field

Carter 2 Mary Baker . . . . . NW NE SE 35-9n-3e
Pumped 28 bbl. oil, 10-qt. shot, Cypress 1,523-43 ft.
Carter 2 St. Pierre . . . . . SW SE SW 36-9n-3e
Pumped 84 bbl. oil, 20-qt. shot, Cypress 1,538-61 ft.
Carter 10-7 John McFadden . . NE NE SW SW 10-8n-3e
Gas-input well, Cypress sand 1,489-1,523 ft., Paint Creek Stray 1,587-1,602 ft.
Carter 13-2 Cleve Reed . . . . . NE NE NE NW 13-8n-3e
Gas-input well, Cypress 1,520-39 ft.
Carter 4 Larimore . . . . . NW NW NW 21-8n-3e
Pumped 180 bbl. oil, 60-qt. shot, Paint Creek Stray 1,544-92 ft.
Carter 4 H. Durbin . . . . . SE SE SW 4-7n-3e
Pumped 23 bbl. oil, 5 and 10-qt. shots, Cypress 1,519-53 ft.
Texas 9 L. Wooten . . . . . NW SE SE 31-7n-3e
Pumped 30 bbl. oil and 6 bbl. water, 4-qt. shot, Cypress sand 1,562 ft., T.D. 1,586 ft., P.B. to 1,580 ft.
Texas 1 C. W. Mums . . . . . SW SE NE 6-6n-3e
Dry, Cypress 1,608-17 ft.
Texas 12 A. H. Yakel . . . . . NW SW SE 6-6n-3e
Pumped 14 bbl. oil, Cypress 1,574-82 ft.
Texas 2 E. Maxwell . . . . . NW SE SW 19-6n-3e
Pumped 24 bbl. oil, 4-qt. shot, Cypress 1,608-16 ft.

Franklin County

Helmerich & Payne 1 Sanders . . NW NW NW 35-7s-4e
Pumped 476 bbl. oil, McClosky 3,100-13 ft.

Hamilton County

Kingwood 4 Morris . . . . . SE SE NE 34-5s-6e
Pumped 90 bbl. oil, 20-qt. shot, Benoist 2,953-61 ft.
A. Cameron 1 Wilson . . . . . NW NW NE 6-6s-7e
Pumped 264 bbl., 11 per cent water, 30-qt. shot, Cypress 2,712-32 ft.
Duncan 1 Epperson . . . . . S½ NW NE 34-5s-6e
Pumped 150 bbl. oil and 10 bbl. water, 20-qt. shot, Benoist 2,986-3,005 ft.

Henderson County

Media 1 M. L. Evans . . . . . NW NW NW 18-9n-4w
Dry, T.D. 402 ft.

Jasper County

Pure 1 Ed Wagner-A . . . . . SW SW NW 16-6n-10e
Flowed 900 bbl. oil, 5,000 gal. acid, McClosky 2,778-2,815 ft.
Carter & Arnold 2 Swick . . . . . SW SE NE 17-6n-10e
Pumped 160 bbl. oil, 2,000 and 2,000 gal. acid, McClosky 2,778 ft., T.D. 2,820 ft.
Pure 1 S. Rogers . . . . . E½ NE SW 8-5n-10e
Flowed 900 bbl. oil, 5,000 gal. acid, McClosky 2,792 ft., T.D. 2,804 ft.

Jefferson County

Nash Redwine 1 Ray . . . . . SW SW SE 9-1s-2e
Pumped 56 bbl. oil, Benoist 1,928-36 ft.

Lawrence County

Kentucky National 2 Citizens Trust SE NW 13-4n-11w
Dry, 1,157 ft.
Bradshaw 1 Kirkmood . . . . . W½ SW SE 3-3n-12w
Dry, Golconda 1,450 ft., Ste. Genevieve 1,738 ft., T.D. 1,835 ft.

Marion County—Salem Field

Texas 1 P. Chance . . . . . NW NW SW 4-2n-2e
Pumped 24 bbl. oil, 1,500 and 3,000 gal. acid, McClosky 2,154-66 ft., T.D. 2,235 ft.
Texas 6 T. Fisher . . . . . E½ NE NE 4-2n-2e
Pumped 48 bbl. oil, 3,000 gal. acid, McClosky 2,143-48 ft.
Texas 11 M. A. Tate . . . . . SE SW SW 31-2n-2e
Pumped 70 bbl. oil and 70 bbl. water, 2,000 gal. acid, McClosky 2,066-72 ft., T.D. 2,070 ft.
Texas 84 City of Centralia . . . . . SE SW NW 4-1n-2e
Pumped 147 bbl. oil, 3,500 gal. acid, McClosky 1,993-98 ft., T.D. 2,135 ft.
Texas 85 City of Centralia . . . . . NW NE SE 4-1n-2e
Pumped 161 bbl. oil, 3,000 gal. acid, McClosky 2,006-12 ft., 2,045-53 ft., 2,075-86 ft., T.D. 2,140 ft.
Texas 61 City of Centralia . . . . . SW SE NE 5-1n-2e
Pumped 189 bbl. oil, 5,000 gal. acid, McClosky 1,976-2,006 ft., 2,025-35 ft., Salem 2,200 ft., T.D. 2,215 ft.
Gibson & Jennings 7 Phillips . . . SW NW NW 7-1n-2e
Salt-water disposal well, T.D. 1,510 ft.
Texas 10 M. A. Tate . . . . . W½ SW NE 7-1n-2e
Flowed 420 bbl. oil, 3,000 gal. acid, Devonian 3,416-34 ft., 3,453-60 ft., T.D. 3,485 ft.
Texas 41 L. Hawthorne . . . . . SW NW NE 8-1n-2e
Flowed 184 bbl. oil, 3,000 gal. acid, Devonian 3,495-3,502 ft., T.D. 3,505 ft.

Randolph County

Rand Development 1 Grant . . . . . SE SE NW 17-5s-5w
Dry, Devonian 2,298 ft., T.D. 2,365 ft.

Richland County

Pure 2 H. W. Schilling . . . . . N½ NE SE 32-4n-9e
Pumped 86 bbl. oil, 5,000 gal. acid, McClosky 2,981-93 ft., T.D. 3,005 ft.
Pure 2 E. Holtz . . . . . W½ NW NW 7-4n-10e
Flowed 389 bbl. oil, McClosky 2,880-92 ft., T.D. 2,910 ft.

Saline County

C. V. and F. W. Parker . . . . . NW SW SE 8-10s-5e
Dry, Chattanooga 4,297 ft., Devonian 4,519 ft., T.D. 4,624 ft.

St. Clair County

F. Mithcell 1 G. Stanbert . . . . . SE SE NW 23-1n-6w
Location abandoned.

(Continued on Page 87)

Curtailment Continues to Be Big Issue on Coast

By L. P. STOCKMAN

LOS ANGELES, Calif., Oct. 21.—In the face of the large number of prolific wells that have been completed for several months past and the critical point reached in curtailment it would take a confirmed optimist to see even a faint ray of hope for some alleviation in the future. And yet some relief may be realized by next summer unless something develops that might dim the hopes before that time. There is no possibility of dispensing with curtailment for several years to come under normal conditions but the curtailment problem may become somewhat less burdensome by next summer. This possible alleviation may come from a smaller number of completions coupled with the normal decline that is taking place in settled and semiflush production. The primary factor that is causing so much hard work on the part of the California Conservation Committee in balancing production and demand is the unusually large number of prolific wells that are being completed each month. A recent check indicated that approximately 250,000 bbl. of new production would be added by new wells and recompletions during the last 3 months of 1941. In order to keep production within striking distance of demand this amount must be absorbed during this period by reducing the production of producing wells by about that amount.

This important factor which has been influencing production is due to consistent completions in the Canal, Coalinga, Cole's Levee, Greeley, Kettleman North Dome, Rio Bravo, Ten Section, Tupman, Ventura Avenue and Wilmington fields. Completions in other fields, with few exceptions, have not become especially troublesome although a number of excellent wells have been completed in the Dominguez and Rosecrans fields during the past several months. The relief that is expected to become a factor of importance next summer can be attributed to the fact that many of the flush fields now undergoing development will be fairly well drilled up within another 6 months if the present rate of development is continued.

Exploration to Be Resumed

The time is coming in the not far distant future when prospectors will resume aggressive exploratory work. It has been over a full year since any new primary field has been discovered and this lack of undeveloped acreage is bound to catch up sooner or later. In one way it is a good thing that no highly flush field has been found as this would further complicate curtailment but in the long run operators require new discoveries to maintain existing production. The last principal discovery was the finding of the Paloma field in Kern County by Western Gulf Oil Co. and Texas Co., but due to conservative development this field has not become a factor of any consequence to date. This discovery was recorded in August 1939. Previously the Strand and Northeast Coalinga fields were opened. The former has not proved especially productive in the Stevens but the latter appears to be an accumulation of considerable importance. Discoveries during the year to date appear to be of secondary importance, although the discovery well on the Del Valle anticline in the Castaic region in Los Angeles County indicates the possibility that substantial production may later be developed.

SAN JOAQUIN VALLEY

Pacific Western Oil Co. appears to have defined the limits of production in the northwestern part of the Wasco field of Kern County and while this well may later be completed as a commercial producer this remains to be seen. This outpost, 1 Meyer in 7-27-24, found the upper zone wet and plans were at once started to deviate the hole. With bottom at 13,150 ft. the company drilled through the 7-in. casing which had been set at 11,343 ft. The 7-in. was drilled through at 10,968 ft. and considerable difficulty is being experienced in whipstocking the hole in the desired direction. It would not be at all surprising if the company ultimately found it necessary to back up another 1,000 ft. in order to facilitate redrilling. The Wasco field has proved to be very much smaller than expected and for this reason Continental Oil Co. which drilled the discovery well finds itself with only a small amount of productive acreage. Standard Oil Co. holds by far the best part of the productive acreage and has been aggressively developing this acreage. It is just starting its sixth well on the Mushrush lease in 7-27-24, having completed five excellent flowing wells to date. All production up to the present has been from the upper zone and for this reason the productivity of the lower zone has not been determined. It was found in Continental's discovery well but was not tested. Cores indicated, however, that it looked far better than the upper zone now being exploited. Present production is coming from 13,000 ft. and the bottom of the second zone is located at about 15,000 ft.

Greeley—Ten Section

No. 11-24 Kern County Land of Standard Oil Co. in the Greeley field of Kern County, a recent completion flowing at the rate of 5,228 bbl. of very clean 35-gravity oil daily on a production test early in the week, is one of the best wells finished in this field in a long time. No. 11-24 Kern County Land on a wide open flow test would undoubtedly exceed 7,500 bbl. per day with ease. Extension work out on the north plunge of the Greeley structure is nearing completion and General Petroleum Corp., which proved up the existence of large production in the Vedder zone out on the northern edge of the field, and Superior Oil Co., which has developed several leases in that area, are both slowing up drilling operations. At present Superior is running one string of tools and General Petroleum has one well under way on the Oughton lease and is rigging up another. In the Ten Section field, Shell Oil Co. has restricted drilling operations to three wells and will probably maintain this rate for some time to come. For the past several months, all completions in this field have been finished by the slim-hole method. Superior Oil Co. extended the limits of production in the Rio Bravo field of Kern County by coring the Rio Bravo zone at 11,282 ft. in 1 Curtis in 28-28s-25e. A string of 7⅝-in. casing has been set at the top of the oil sand and a production test will be conducted within the next week or 10 days as the company will undoubtedly drill down into the Vedder zone before finishing work. Superior 1 Curtis and 1 Osborn of the same company are the most westerly wells in the Rio Bravo field. Both indicate that the outer limits of production are still further to the west.

SAN JOAQUIN VALLEY COMPLETIONS

Greeley Field

Standard 11-24 Kern County Land 18-29s-26e
Flowed 5,228 bbl., daily rate, 35.1-gravity, 3,723,000 cu. ft. gas. 70/64-in. to 20/64-in. beans. Pressure 1,580/1,600 lb. Shut-in pressure same. 7-in. water string cemented 11,290 ft. 259 ft. of 5-in. liner landed 11,510 ft. Perf. 11,251-11,510 ft. 11,495 ft. of 2½-in. tubing. T.D. 11,510 ft. Top Rio Bravo oil sand 11,307 ft. top Vedder oil sand 11,347 ft. Bottomed in Vedder oil sand. Completed in both Rio Bravo and Vedder zones. Largest completion in several months. Kern County.

Kettleman North Dome Field

Kenda 23-20-Q 20-22s-18e
Flowed 1,058 bbl., 37.8-gravity, 2 per cent cut, 2,128,000 cu. ft. gas. 28/64-in. bean. Pressure 170/200 lb. T.D. 7,745 ft. P.B. 7,415 ft. 6⅝-in. water string cemented 7,084 ft. 345 ft. of 4½-in. liner. Perf. 7,105-7,241 ft., 7,321-7,405 ft. Cemented through perf. 7,321 ft. 7,013 ft. of 2½-in. tubing. Top brown shale 5,380 ft., top Temblor 6,805 ft. Completed in Temblor. Kings County.

Northeast Coalinga Field

Standard 84-19-B fee 19-19s-16e
Flowed 2,709 bbl., 37.7-gravity, 1,650,000 cu. ft. gas. 33/64-in. bean. Pressure 975/1,200 lb. Shut-in pressure 1,300/1,325 lb. T.D. 8,245 ft. 7-in. water string cemented 8,045 ft. 278 ft. of 5-in. liner landed 8,243 ft. Cemented through perf. 8,186 ft. 60-mesh perf. 8,186-8,243 ft. 8,203 ft. of 2½-in. tubing. Top Kreyenhagen 6,909 ft., top glauconitic 7,975 ft. Top Gatchell 8,044 ft. Bottomed in oil sand. Fresno County.

Midway-Sunset Field

Standard 77-33-D fee 33-32s-24e
Pumped 135 bbl., 21.7-gravity, 8 per cent cut. T.D. 3,132 ft. 8⅝-in. water string cemented 3,082 ft. 85 ft. of 6⅝-in. liner landed 3,131 ft. 60-mesh perforations 3,077-3,131 ft. 3,066 ft. of 2½-in. tubing. Kern County.

Rio Bravo Field

Union 47-34 Kern County Land 34-28s-25e
Flowed 1,430 bbl., 40.3-gravity, 1,452,000 cu. ft. gas. T.D. 11,444 ft. 7-in. water string cemented 11,390 ft. 66 ft. of 5-in. liner landed 11,441 ft. Perf. 11,397-11,441 ft. 11,408 ft. of 2-in. tubing. 22/64-in. bean. Pressure 1,475/1,650 lb.; with 7/64-in. bean pressure is 1,600/1,650 lb. Top Rio Bravo zone 11,399 ft. Bottomed in Rio Bravo oil sand. Kern County.

Tupman Field

Richfield 56-29-A Kern County Land 29-30s-25e
Flowed 1,498 bbl., 32.2-gravity, 4.9 per cent cut, 1,200,000 cu. ft. gas. T.D. 9,150 ft. Elev. 310 ft. 8⅝-in. water string cemented 8,445 ft. 759 ft. of 6⅝-in. liner landed 9,149 ft. Perf. 8,476-8,606, 8,665-8,881 and 8,924-9,147 ft. 9,107 ft. of 2½-in. tubing. Two 1½-in. beans. Pressure 1,300/2,500 lb. Kern County.

SAN JOAQUIN VALLEY OUTPOSTS

Kettleman North Dome Field

Standard 344-13-H fee 13-21s-16e
Drilling in hard sand 9,960 ft. Scheduled for completion in Eocene. Located extreme western end of structure. Fresno County.
Standard 1-1-U fee 1-23s-16e
Drilling in hard shale 7,697 ft. 9⅝-in. casing cemented 7,123 ft. Located extreme eastern end of structure. Kings County.

Paloma Field

Western Gulf 12-12-B Kern County Land . . . 12-32s-26e
Rigging up, about 1 mi. southeast of discovery well and is expected to be lowest structurally in field. Location was made downstructure to determine whether normal crude oil can be produced outside gas-cap area. All wells drilled in this field to date have been located in gas-cap area. Kern County.

Rio Bravo Field

Superior 1 Curtis 28-28s-25e
Drilling at 11,330 ft. in oil sand. Top Rio Bravo oil sand 11,282 ft. Cemented 7⅝-in. casing at 11,282 ft. Kern County.
Union 78-28 Crites 28-28s-25e
Drilling in sandy shale 4,962 ft. Cemented 13⅜-in. casing at 1,509 ft. Kern County.

Round Mountain

Spartan Drlg. Co. 1 Hiatt 32-28s-29e
T.D. 2,089 ft. Fishing drill collar and core barrel; cleaned out to top of fish at 2,037 ft.

Strand Field

Associated 25-7-e Kern County Land 7-30s-26e
Drilling 9,197 ft. in hard sand and shale. Kern County.

Wasco Field

Pacific Western 1 Meyer 7-27s-24e
T.D. 13,150 ft. Formation test 13,130 ft. resulted in recovery of salt water. Plugged 13,035 ft., bridge 11,105 ft. Drilled through 7-in. casing at 10,968 ft. Now redrilling at 11,140 ft. Kern County.

Wheeler Ridge

Richfield 2 Kern County Land 28-11n-20w
Drilling 8,591 ft. in sand and shale. Spot coring. Kern County.

SAN JOAQUIN VALLEY WILDCATS

Cantua District

Texas 1 Everding 24-17s-15e
Drilling 9,690 ft. in hard tight gray sand of Domengine. Expect possible productive interval next 150 ft. Fresno County.

Northeast Coalinga District

Associated 1 U.S.I. 6-19s-16e
T.D. 9,020 ft. Bottomed in hard gray siltstone. Top Fleishacker 8,710 ft. Base Fleishacker 8,752 ft. No showings top to bottom. Fresno County.

Kreyenhagen District

Continental 1 Kreyenhagen 4-22s-16e
Drilling 10,090 ft. in hard siltstone of Eocene age. Cored tight hard sand at 9,934-61 ft. giving fair cut. Fresno County.

Blackwells Corner District

Seaboard 66-17 Beer 17-26s-19e
Drilling 7,850 ft. in Moreno hard shale. Kern County.

Buena Vista Hills District

Honolulu 25-P fee 10-32s-24e
Drilling 8,630 ft. in hard tight gray sand with streaks of shale, giving no cuts. Kern County.

Pyramid Hills District

Associated 31 West Slope 20-24s-18e
Drilling 377 ft. 18 ft. of 11¾-in. surface pipe cemented. Kings County.

Rumsey Hills District

Standard 1 Tippetts 9-12n-3w
Drilling sandy shale 1,930 ft. Yolo County.

Rio Vista Gas Field

Standard 1 McCormack 2-3n-2e
Formation test 4,464-4,538 ft. open 42 minutes showed

5,000,000 cu. ft. gas. Killed and cemented 6⅝-in. casing at 4,460 ft. with 600 sacks cement. Gas zone is objective. Solano County.

Tejon District

Richfield 1 Tejon ranch 2-10n-19w
T.D. 7,277 ft. Repairing drilling equipment. in gray sand and shale. Kern County.

Sacramento District

Ind. Expl. Co. 1 Perry 19-7n-6e
Location approximately 12 mi. SE of Sacramento. Company has 6,500 acres under lease and will be drilled on assumption that same geological section is present in this area from which production is obtained in the Coalinga area. Obviously this well will change existing opinion if completed as commercial producer. Bell & Loffland have contract for actual drilling. Sacramento County.

LOS ANGELES BASIN

R. E. Havenstrite late in the week recompleted 1 Lincoln in 16-4n-17w, the discovery well on the Del Valle anticline in the Castaic district of Los Angeles County, flowing 945 bbl. of clean 34.1-gravity oil and 300,000 cu. ft. of gas through the tubing along with 600,000 cu. ft. of gas through the annular space between tubing and casing. This represents a gas-oil ratio of about 1,000 cu. ft. of gas per barrel of oil, an unusually favorable ratio. Originally this well was brought in flowing 755 bbl. of clean 56.8-gravity oil and 9,500,000 cu. ft. of gas daily, although at one time gas production jumped to about 15,000,000 cu. ft. daily and crude-oil production dropped to around 350 bbl. per day. In order to correct this high gas-oil ratio the operator killed the well and cut and removed the 6⅝-in. liner down to 6,802 ft. Unable to remove the entire steel liner the company ran in 6⅝-in. blank drillable liner and landed on top of the original steel liner. Shoe of the 8⅝-in. water is at 6,653 ft. and bottom of the hole is 6,954 ft. Location was staked some time ago for a second well on this lease south of the discovery well, the idea being to drill lower structurally in order to get out of the gas-cap area. This well is important because every indication points to the existence of another 2,500 ft. of Modelo (upper Miocene) below present production. If this is ultimately found to be true, the Del Valle anticline will prove exceptionally productive. Considerable leasing has been done in the Newhall-Castaic region during the past year and now that substantial production has been developed by Havenstrite additional exploration is anticipated.

Inglewood

R. R. Bush Oil Co. seems to have started something when it drilled 1 Sentous in 17-2-14 in the Inglewood field of Los Angeles Basin because this work has resulted in this field by Standard Oil Co. and Kettleman & Inglewood Corp. The latter is grading road to a location staked for 26 Rubel and has location mapped for 27 Rubel. Standard Oil Co. is grading road to the location of 1-85 Los Angeles Investment and has derrick going up for 1-86 Los Angeles Investment. This work is rather surprising because it had been expected that operators holding leases in the center of the field and not directly being drained would retard drilling until a later date. In addition to 1-85 and 1-86 Los Angeles Investment, Standard has 3-1 Los Angeles Investment rigged up and ready for early work. The latter well is a first line offset to 1 Sentous of R. R. Bush Oil Co. but because of the present condition of 1 Sentous work has been delayed. Production of 1 Sentous has dropped to the point that there is some question as to whether it will ever pay out. This well is at present flowing 75 bbl. of 31.6-gravity oil cutting 9 per cent daily through a 12/64-in. bean from a depth of 8,760 ft. Because of the substantial decline in production of 1 Sentous it had been believed that offset drilling would be dispensed with for the time being. Construction in other parts of the structure indicate, however, that Standard will proceed with early work on the offset well. Once this development program gets under way in the Inglewood field there will be no way to stop it due to the number of operators involved and the location of various leases. There is every reason to believe that the Sentous zone will be found highly productive on top of the structure and there is a strong possibility that there may be an intervening zone between present productive sands and the Sentous horizon.

LOS ANGELES BASIN COMPLETIONS

Dominguez Field

Union 5 Austin 29-3s-13w
Flowed 817 bbl., 33.6-gravity, 1,215,000 cu. ft. gas. 30/64-in. bean. Pressure 610/250 lb. T.D. 7,515 ft. 5½-in. solid string landed and cemented 7,515 ft. Perf. with 142 shots at 7,020-94 ft., 4 shots at 7,449-50 ft., and 90 shots at 7,455-7,500 ft. 7,476 ft. of 2½-in. tubing with packer at 6,989 ft. Located extreme west end of field and completed in eighth Callender zone. Los Angeles County.

East Coyote Field

H. M. Tucker 1 Wright 19-3s-9w
Pumped 182 bbl., 23.9-gravity, 2.5 per cent cut. T.D. 4,210 ft. 7-in. water string 4,165 ft. 60 ft. 5½-in. liner landed 4,209 ft. 60-mesh perf. 4,164-4,209 ft. 3,900 ft. 2½-in. tubing. Completed in upper zone. Orange County.

East Coyote Oil Co. 1-8 Coyote 19-3s-9w
Pumped 150 bbl., 22.3-gravity oil, 10 per cent cut. T.D. 4,249 ft. 6⅝-in. water string cemented 4,249 ft. Perf. 4,225-48 ft. 4,135 ft. 2½-in. tubing. Completed in upper zone. Orange County.

Huntington Beach Field

Signal O. & G. 15 Bolsa 34-5s-11w
Pumped 100 bbl., 26.1-gravity, 3 per cent cut. Preliminary-production test 3,950 ft. pumped 372 bbl., 25.5-gravity oil cut 38 per cent. Located water 3,680 ft. P.B. 3,625 ft. T.D. 3,950 ft. 8⅝-in. cemented 3,545 ft. and cemented through perf. 992 ft. 126 ft. 6⅝-in. liner landed 3,625 ft. Perf. 3,531-3,625 ft. 3,524 ft. 2½-in. tubing. Located west end of Huntington Beach field on acreage acquired several months ago. Orange County.

Signal O. & G. 14 Bolsa 34-5s-11w
Flowed 515 bbl., 26.1-gravity, 1 per cent cut on gas lift. T.D. 3,753 ft. 8⅝-in. water string cemented 3,329 ft. and cemented through perf. 993 ft. 296 ft. 6⅝-in. liner landed 3,598 ft. Perf. 3,323-3,598 ft. 3,502 ft. 2½-in. tubing. Located west end of field on acreage leased earlier this year. Orange County.

Rosecrans Field

So. Cal Pet. 1 Van Nuys 19-3s-13w
Flowed 400 bbl. daily rate, 31.1-gravity, 1-2 per cent cut, 1,250,000 cu. ft. gas. T.D. 7,665 ft. 5¾-in. cemented 7,268 ft. 775 ft. 4-in. liner landed 7,665 ft. Cemented through perf. 7,331 ft. Perf. 7,331-7,665 ft. 7,665 ft. 2-in. tubing. Previous to completion ran 4-in. perf. liner which froze at 7,583 ft. Could not pull so hole was plugged back and redrilled to present completion depth. Completed in O'Dea zone. Los Angeles County.

Wilmington Field

C. M. Morse 1 Marine 29-4s-13w
Flowed 110 bbl., 16.5-gravity, 20 per cent cut. T.D. 3,725 ft. 8⅝-in. water string cemented 3,062 ft. and cemented through perf. 1,015 ft. 693 ft. 5¾-in. gravel-packed liner landed 3,725 ft. Perf. 3,073-3,148 ft., 3,188-3,298 ft., 3,407-3,643 ft., 3,672-3,723 ft. 3,714 ft. 2½-in. tubing with packer 2,995 ft. Completed in Ranger zone. Los Angeles County.

Union Pacific 158 fee 34-4s-13w
Flowed 675 bbl., 21.3-gravity, 38/64-in. bean. Pressure 750/950 lb. T.D. 3,031 ft. 7-in. liner cemented 2,768 ft. 363 ft. gravel-packed liner landed 3,031 ft. Perf. 2,692-2,749 ft., 2,769-3,031 ft. 2,650 ft. 2½-in. tubing. Completed in Ranger zone. Los Angeles County.

Wil-Forth Oil Corp 1 Wilmington Community 32-4s-13w
Pumped 225 bbl., 16.5-gravity, 2.5 per cent cut. 8⅝-in. water string cemented 2,993 ft. 3,670 ft. 5¾-in. liner with perf. 2,993-3,073 ft., 3,113-3,200 ft., 3,303-3,670 ft. 3,620 ft. 2½-in. tubing. Completed in Ranger zone. Los Angeles County.

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LOS ANGELES BASIN OUTPOSTS

Long Beach Field

Union 19 L.B.C. 30-4s-12w
Drilling sand and shale 4,594 ft. Los Angeles County.

Rosecrans Field

Universal Consolidated 14 Trust 18-3s-13w
Drilling 8,200 ft. in sand and shale. Los Angeles County.

LOS ANGELES BASIN WILDCATS

Dominguez-Gardena District

Wood-Mellon 1 Wood 31-3s-13w
T.D. 7,795 ft., P.B. 2,400 ft. Redrilled to 6,864 ft. Oil showing logged at 6,750-6,864 ft. Formation test with bottom at 6,864 ft. recovered drilling mud with a trace of oil on bottom. Packer slipped and test unconclusive. Los Angeles County.

Inglewood District

Federal 1 Smith 7-2s-14w
T.D. 7,890 ft. P.B. 7,700 ft. to sidetrack drill collar and core barrel. Redrilled to 7,805 ft. Reaming. Could not wash over and recover drill collars and core barrel, now trying to redrill past fish. Los Angeles County.

Malibu District

Sovereign Oil Co. 1 Malibu 7-2s-18w
Drilling 2,597 ft. in hard, tight gray sand with streaks of shale. Los Angeles County.

Pico District

Cal-Pico 1 Pico 7-2s-11w
T.D. 7,086 ft. Suspended but not abandoned. Los Angeles County.

Whittier District

Fullerton 1 Whittier 25-2s-11w
Location between 1 Sansinena and 1 Mineral Springs of Union Oil Co. both of which showed production possibilities. Los Angeles County.

COASTAL DISTRICT

Development work in the Coastal area was devoid of any important changes during the current week despite the relatively large number of drilling wells. In the Ventura Avenue field California Alliance Petroleum Co. deepened 1 Hartman from 7,555 to 7,657 ft. and upon making a formation test found that the well is capable of flowing 300 bbl. of 32.3-gravity oil cutting 2 per cent daily. This flow was through a ⅝-in. bottom-hole bean. The well also flowed 249,000 cu. ft. of gas and showed a pressure of 700 lb. Upon completion of the test the company began cleaning our preparatory to completion. Lloyd Corp. 5 Lloyd bottomed at 9,849 ft. with 7-in. casing cemented at 9,844 ft. showed all salt water on a formation test of perforations at 9,310-30 ft. The perforations were squeezed and further testing will be undertaken. The company is testing several hundred feet of formation to determine the best point from which to produce. In the Rincon field which is located at the extreme western end of the major Venture Avenue anticline where it plunges westward into the bed of the Pacific Ocean, Chanslor-Canfield Midway Oil Co. has completed 36-B Hobson with bottom at 5,628 ft. but with effective plugged depth at 5,343 ft. The hole has been finished with 134 ft. of 4¾-in. liner including 63 ft. of gravel-packed liner landed at 5,342 ft . Top of the liner was cemented inside of the 8⅝-in. water string landed at 5,240 ft. This company has two additional rigs standing and is grading for another.

Santa Barbara County

Drilling operations in Santa Barbara County are at present restricted to relatively few areas and there is no indication that additional work is contemplated for the immediate future. Oil Group, Inc., has resumed drilling on 1 Hyland in the Summerland district back of the ocean front and a depth has been reached of 3,350 ft. with no showings of importance to date. In the Santa Maria Valley field, Union Oil Co. has concluded drilling operations on 2-1 Bradley lands in 36-10-34 at 5,070 ft. and 393 ft. of perforated was run in several days ago. The well does not appear to have any kick and preparations are under way to install pumping equipment. Top of the Monterey was logged at 4,697 ft. Derrick has been erected for 2 Morrison in 27-10n-34e and location has been staked for 2 McCoy-Cooney in 27-10n-34e and rig material is expected to be placed on ground shortly. No. 2 Morrison will be drilled on acreage acquired from Ohio Oil Co. a couple of months ago. Bolsa Chica Oil Corp.. which is drilling on State Tideland Permit 191-7, drilled into an old hole and found it necessary to back up and land surface pipe at 600 ft. to keep away from an old fish.

COASTAL DISTRICT WILDCATS

Coal Oil Point District

Bolsa Chica 191-7 Permit 25-4n-29w
Drilling 850 ft. Landed 600 ft. of 11¾-in. casing. Santa Barbara County.

Huasna District

Harvey Oil Corp. 1 Huasna 11-32s-14e
Drilling 1,784 ft. in sand and shale. San Luis Obispo County.

Santa Maria District

Union 2-1 Bradley 36-10n-34w
Drilling 5,070 ft. in sandy shale. Cemented 7-in. casing at 5,067 ft. 393 ft. of perf. and cemented through perf. at 4,665 ft. Top Monterey 4.697 ft. Santa Barbara County.

Shiells Canyon District

O. C. Field 3-B Calumet 3-3n-19w
Drilling 2,060 ft. Ventura County.

Tar Springs District

Superior 1 Tar Springs 24-32s-14e
Drilling 5,990 ft. in hard shale. San Luis Obispo County.

Permian Basin

(Continued from Page 54)

SOUTHERN WEST TEXAS DRILLING REPORT

Crane County

Gulf 1-F University, SE SE Sec. 22, Blk. 31, University Sur., drilling 7,145 ft.

Crockett County

Moore & Olson 1-C Halff, NE NE NE Sec. 68, Blk. 1, I.&G.N. Sur., first report.

Ector County

Forest Development Corp. 1 Bradley, SE SE Sec. 18, Blk. 43, Twp. 3s, T.&P. Sur., drilled broken pay 4,350-4,410 ft., bailing and testing, T.D. 4,410 ft.
Forest Development Corp. 1-H Moss, SW NW Sec. 48, Blk. 43, Twp. 2s, T.&P. Sur., T.D. 4,300 ft., shot 1,600 qt. 4,070-4,300 ft., testing.

Hudspeth County

Haymon Krupp 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur., 5½-in. casing cemented at 6,202 ft., T.D. 6,224 ft., cementing cavings last report.

Loving County

H. C. McAuley 1 E. Hall, SE Sec. 60, Blk. 7, W.&N.W. Sur., drilling 700 ft. in anhydrite.

Menard County

Harry Baldwin 1 J. A. Leggett, 760 ft. from W and 900 ft. from S lines Sec. 1, B.S.&F. Sur., first report.

Pecos County

S. D. Pattillo 1 O'Neil, Sec. 74, Blk. 10, H.&G.N. Sur., Ordovician test, pulling 10-in. casing, T.D. 891 ft.
S. D. Pattillo 1 Hoffman, SE NW Sec. 6, Blk. 141, T.&St.L. Sur., 2,000-ft. test, set 7-in. 855 ft., drilling 1,090 ft.
Taubert, McKee & Siemoneit 1 Crockett, SW Sec. 4½, Blk. 3, H.&T.C. Sur., top Simpson 4.755 ft., checking 27 ft. high on Simpson lime, slight showing of oil in Simpson from 5,270-71 ft., 7-in. casing, 5,254 ft., saturation in Simpson 5,270-81 ft., blow gas.
Cardinal 1-F White & Baker, 440 ft. from N and 3,050

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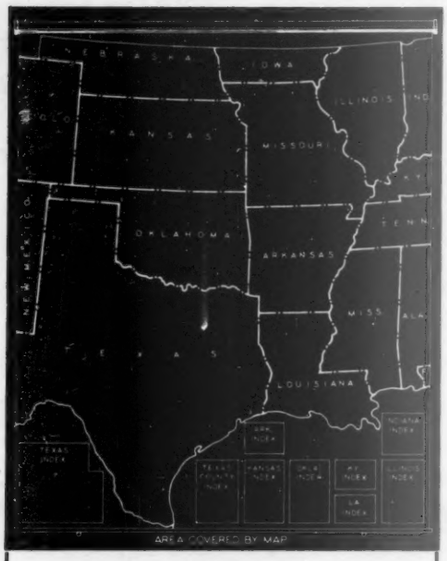

OFFICIAL NOMENCLATURE MAP OF MID-CONTINENT AREA

SHOWS: Oil fields in green and gas fields in red, hand colored. State indexes at bottom of map giving location of each field and official field names as designated by the various State Nomenclature Committees, Cities, Towns, County Seats, Townships, Ranges and principal streams. Sketch above shows area covered by map. Size: 82" wide by 96" high. Scale: 1 inch equals 12 miles. Map is obtainable in cylindrical steel case with spring roller, Japanned in dark green, diameter 3", length of case 87". Rolls in and out same as a curtain.

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REMARKS .....

NAME .....

FIRM .....

STREET .....

CITY ..... STATE .....

ft. from E lines of Sec. 53, Blk. Z, T.C.R.R. Sur., first report.

Presidio County

Wilcox 1 Conring, Sec. 102, Blk. 4, H.&T.C. Sur., running 10¾-in. casing at 1,038 ft., last report.
Wilcox 2 Jones-Coffield, Sec. 38, Blk. 34, H.&T.C. Sur., P.B. to 2,369 ft. from 2,399 ft., preparing to P.B. again, last report.

Sutton County

Domain 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W. N.G. Sur., Ellenburger lime test, S.D. 1,098 ft.

Terrell County

E. A. Thomason 1 Phelps, SE SE Sec. 73, I.&G.N. Sur., 5¼-in. 1,492 ft., T.D. 1,546 ft.
H. H. Sides 1 Rose, Sec. 15, Blk. 148, T.&St. L. Sur., location.

Reeves County

Roy Johnson 1 Perkins, Sec. 18, Blk. 7-C, P.S.L. Sur., S.D. 1,739 ft.

Upton County

J. F. Slaughter 1 Porter, Sec. 184, Blk. E, C.C.S.D.& R.G.N.G. Sur., location.
B. H. Kean 1 Taylor, Sec. 22, Blk. 2-B, G.C.&S.F. Sur., S.D. 2,670 ft.

Ward County

Fitzpatrick & Slack 1 Wilson, Sec. 145, Blk. 34, H.& T.C. Sur., 1½ mi. SE of discovery well, T.D. 1,105 ft., reaming 10-in. casing.
Gulf 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur., scheduled Ordovician test, top Ellenburger 9,022 ft., P.B. to 8,836 ft., old T.D. 9,167 ft., twisted off drill pipe at 8,694 ft. while drilling by junk, fishing.
Sinclair Prairie 1 Wirt Davis, 330 ft. NW, 2,310 ft. SW lines, Sec. 32, Blk. 4, H.&T.C. Sur., 3,500-ft. test, broken oil shows from 2,827 to 3,190 ft., drilling again in sidetracked hole, cleaning out 2,983 ft.
Magnolia 1-41 Sealy, 2,310 ft. from W and 990 ft. from S lines Sec. 41, Blk. F, G.&M.M.B.&A. Sur., drilling 2,555 ft.

Winkler County

Gulf 147 O'Brien, SE Sec. 11, Blk. F, G.&M.M.B.&A. Sur., drilling 2,256 ft.

NORTHERN WEST TEXAS

In Andrews County Phillips Petroleum Co. has staked two outposts to its indicated field discovery, 1 Embar, Section 4, Block 44, Township 2n, T.&P. Survey. The 1 Embar, after showing for 3,000,000 cu. ft. of gas following a 475-qt. shot from 4,240-4,335 ft., has been plugged back to 4,225 ft. and will redrill the hole and go deeper to the Holt lime found productive at about 5,200 ft. in northern Ector County. One of the new outpost tests, Phillips 1 University-Drews, is 1¼ miles northeast of 1 Embar and is in the NW NE Section 32, Block 10, University lands. The second test is 2 Embar, ¾ mile southeast of the ungaged discovery and located in the NE NE Section 5, Block 44, Township 2n, T.&P. Survey. Both tests are located on acreage checkerboarded over the southwestern part of Andrews County and acquired by Phillips during the past several years at University of Texas public-land auctions for a cost exceeding $600,000.

Slaughter-Duggan Outposts Top Anhydrite

Two wildcat tests, one east of the Slaughter field in Hockley County and the other west of the Duggan area in Cochran County, have both reported tops of the anhydrite which tend to indicate drops near the edges of the large Slaughter-Duggan-Dean structure. About 3 miles west of the Duggan field Ray R. Rhodes 1 Slaughter Dean, 672 ft. from the north and 8,243 ft. from the east line of League 89, Lipscomb County School Lands Survey, topped the anhydrite at 2,365 ft., 1,368 ft. above sea level, and checked considerably lower than some wells in the Duggan field but not as low as the lowest ones. Ten miles east of the Slaughter field Cascade Petroleum 1 Walker, Tract 22, League 22, McCulloch County School Lands Survey, topped the anhydrite at 2,320 ft. after encountering a thin section of it at 2,270 ft. Using the higher top the test found the anhydrite 1,174 ft. above sea level or considerably lower than wells in the Slaughter field proper.

Waples-Platter Area

Final completion was registered for George Livermore (formerly Sloan & Zook) 1 Waples-Platter, Section 565, in the Waples-Platter area of the large Wasson field, Yoakum County. It made 161 bbl. of oil daily, cut with 3.2 per cent water, through 2-in. tubing. Total depth is 5,297 ft. One and a quarter miles northwest of the completion Forest Development Corp. is drilling below 5,272 ft. at 1 Whisenant, Section 553. No shows have been yet reported and it is checking considerably lower than wells in the Waples-Platter field.

NORTHERN WEST TEXAS COMPLETIONS

Cochran County

Duggan field: Atlantic 3 Boyd, 449 bbl., 1-in. choke, 10,000 gal. acid, 4,970-5,046 ft.

Gaines County

Seminole field: Skelly 3 Mann, 876 bbl., ½-in. choke, natural 5,070-5,252 ft.
Humble 3-B Blackmore, 515 bbl., ½-in. choke, naturally, 5,120-5,336 ft.
Magnolia and Atlantic 12-285 H.&J., top anhydrite 2,120 ft., dry at 5,285 ft.

Stonewall County

Wildcat: Shell 1 J. D. Patterson, SW NW Sec. 393, Blk. D, H.&T.C. Sur., top Palo Pinto 5,280 ft., top Mississippian 6,490 ft., top Ellenburger 6,737 ft., dry at 6,760 ft., sulfur water.

Yoakum County

Wasson field: Don Danvers 4 Comer, 834 bbl., 1¼-in. choke, 10,000 gal. acid, 5,065-5,232 ft.
Don Danvers 4 Willard, 629 bbl., 1-in. choke, 10,000 gal. acid, 4,990-5,250 ft.
Dunigan & Brahaney 2 Pharr, 1,200 bbl., 1⅝-in. choke, 10,000 gal. acid, 5,130-5,247 ft.
Magnolia 20 Mahaney, 595 bbl., ½-in. choke, 12,000 gal. acid, 5,059-5,200 ft.
Shell 11 Roberts, 856 bbl., tubing, 9,500 gal. acid, 4,930-5,185 ft.

NORTHERN WEST TEXAS DRILLING REPORT

Andrews County

Phillips 1 University-Drews, NW NE Sec. 32, Blk. 10, University Lands Survey, first report.
Phillips 2 Embar, NE SE Sec. 5, Blk. 44, Twp. 2n, T.&P. Sur., ¾ mile north of 1 Embar, first report.
Phillips 1 Embar, 60 ft. S line Sec. 31, Blk. 10, University Lands Sur., cored 4,148-58 ft., slight show oil, T.D. 4,335 ft., P.B. T.D. 4,290 ft., making 3,500,000 cu. ft. gas and spray of oil, cemented back to 4,255 ft., prepare drill out and go deeper.

Cochran County

Rhodes and Atlantic 1 Dean, C NE Tract 4, Lge. 89, Lipscomb County School Lands, top anhydrite 2,363 ft., drilling ahead.

Gaines County

Fred Postello 1 Henry James, SE Sec. 368, Blk. G, C.C.S.D.&R.G.N.G. Sur., derrick up, moving in machinery.
Maloney Drlg. Co. 1 A. D. Neal, SW Sec. 34, C.&M. Cert. No. 414, location, last report.

Hockley County

Cascade Pet. 1 Walker, Sec. 22, Lge. 22, McCulloch County School Lands, top anhydrite 2,270 ft., drilling ahead.

Yoakum County

Sloan & Zook 1 Waples-Platter, Sec. 565, Blk. 4, Gibson Sur., top Brown lime at 4,340 ft., slight show oil 5,240-60 ft., swabbed and flowed 167 bbl. oil in 24 hr., official gage 161 bbl. daily, 3.2 per cent water.
Forest Development 1 A. C. Whisenant, SE Sec. 553, Gibson Sur., 1½ mi. N outpost to Waples-Platter area, top Brown lime 4,420 ft., drilling 5,272 ft.
Amon G. Carter 4-D Wasson, NW SE Sec. 50, Blk. AX, Public School Lands Sur., 9,000-ft. test, showed for 50 bbl. daily at 6,580 ft., found another show oil at 7,020-ft. level, drilling 7,130 ft.

TEXAS PANHANDLE

AMARILLO, Tex., Oct. 21.—There were eight new oil wells and one gas well completed in the district the past week. The new oil potential dropped from the previous week's high of 3,100 bbl. to a total of 1,426 bbl., aggregate, this week. The new gas well was in Moore County and registered a potential of 59,400,000 cu. ft. daily.

PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Magnolia 77 fee (244), 113 bbl., 250-qt. shot, 3,110-60 ft.

Gray County

Bell Oil & Gas 8 Morse B, 210 bbl., pumping, 510-qt. shot, 2,558-2,610 ft.
Bell Oil & Gas 9 Morse B, 80 bbl., pumping, natural, 2,455-2,534 ft.
Magnolia 35 fee (277), 155 bbl., pumping, 540-qt. shot, 2,760-2,875 ft.
Wilcox Oil & Gas 37 Worley, 168 bbl., pumping, 440-qt. shot, 2,945-3,085 ft.

Hutchinson County

Skelly 7 Watkins B, 353 bbl., pumping, 505-qt. shot, 2,735-2,830 ft.
Texas Co. 16 Quinn, 320 bbl., pumping, 205-qt. shot, 3,080-3,150 ft.
Pennowa Co. 3 Perkins, abandoned location.
Wherry 2 Harvey, abandoned location.

Moore County

Texoma Natural Gas 3-G Kilgore, 59,400,000 cu. ft. gas, 3,065-3,527 ft.

Wheeler County

North Fork Oil 9 Jackson, 27 bbl., pumping, 330-qt. shot, 2,164-2,212 ft.

DRILLING REPORT

Cottle County

Ramsey Pet. 1 Lynch, SE SW Sec. 66, J. Poitevent Sur., 5,000-ft. test, drilling 3,967 ft., last report.

Motley County

Humble 1 Matador, Sec. 29, Blk. J, B.S.B.&C.N.G. Sur., drilling 3,950 ft.

Ochiltree County

James R. Macon 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur., T.D. 6,274 ft., P.B. 4,300 ft., swabbing through casing to 3,900 ft., recovering some oil and water.

Swisher County

Krupp-Flaherty 1 Kleen, Sec. 120, Blk. 10-M, 6,500-ft. test, top salt 1,020 ft., S.D., casing 1,747 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., Oct. 21.—Two new wildcats were staked in the Eddy County portion of the Southeastern New Mexico area during the past week. Six miles west

of Eddy County's Getty field, Sudderth and associates have staked location for 1 Willis, 1,980 ft. SW NW 14-20s-28e.

In the territory between the Shugart field and the Kersey-Creek area southeast of the Loco Hills field in Eddy County, Emmerson Broyles has announced location for his 1 Canfield. It is SW SW NW 13-18s-30e, a mile northeast of the Kersey 1 Creek, discovery producer 1¼ miles west of the nearest production in the Shugart field.

In the recently opened Keyes area Neil Wells of Carlsbad has made location for his 2 Keyes, an east offset to No. 1 which opened the area. The new test is NE SW 15-20s-30e.

There were four new oil completions in the district during the past week, three being in Eddy County with one each in the High Lonesome, Loco Hills and Shugart fields, and one completion in Lea County's Hardy field.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

High Lonesome field: Schumaker 1 Levers ..... NE NE 33-16-29
10 bbl., pumping, shot, 2,691-2,825 ft.
Loco Hills field: Texas Trading Co. 2 State ..... SE NE 16-18-29
35 bbl., pumping, shot, 2,519-2,603 ft.
Shugart field: Wilmer Oil & Gas 2-A Ginsberg ..... SW SE 8-18-31
200 bbl., flowing, shot, 3,102-60 ft.

Lea County

Hardy field: Continental 4-A-36 State....SE SW 36-20-37
21 bbl. in 6 hr., ¾-in. choke, shot, 3,638-3,810 ft.

SOUTHEAST NEW MEXICO DRILLING REPORT

Chaves County

H., Steinberger 1 Headley .....NW SW 26-14s-29e
Set 10-in. 350 ft., S.D. 1,095 ft.

Eddy County

Fulton 1 Johnson .....NW SE 22-19-27
Drilling 650 ft.
Truett & Tallmadge 1 Rudahl .....NE SE 2-20-24
R.U. machine.
Wills & Abell 1 Hale 12-20-30
6,000,000 cu. ft. gas from 1,540-60 ft., sulfur water at 1,823-24 ft., P.B. 1,528 ft., perf. casing 1,540-66 ft., est. 100,000 cu. ft. gas; preparing acidize.
Dooley & Haynes 1 Martin .....SE NW 9-18-25
S.D. for water 963 ft.
Knox & Featherstone 1 Hatchett .....SW NE 14-20-26
Set 8¼-in. at 377 ft., S.D. 625 ft.
Talmadge 1 State .....SW NE 24-16-28
Slight show oil 2,505 ft., 10¼-in. at 358 ft., S.D. 2,605 ft.
Trojan 1 Grant .....SW NE 33-20-25
Set 8¼-in. at 1,300 ft., S.D. due to high water 1,641 ft.
Clark & LaNeve 1 Boulter .....SE NW 28-19-27
Oil sand 885-90 ft., 7-in. set at 880 ft., fishing bit 1,085 ft.

Lea County

Stanley & Weiner 1 Saunders .....NE NE 20-21-38
16-in. 80 ft., 8⅝-in. 1,609 ft., small showing of gas 4,134-35 ft., drlg. 4,300 ft.
Great Western Prod. 1-D State .....SE SE 30-12-32
Slight show oil and salt water from 3,022-32 ft., 13-in. 156 ft., 8⅝-in. 1,434 ft., 8-in. 3,048 ft., slight show oil 4,165-72 ft. in lime, drilling 4,065 ft.

Otero County

R. H. Ernest 1 Located Land Co. .....SE SE 20-25-7
20-in. 105 ft., 15½-in. 736 ft., 12½-in. 1,250 ft., 10¾-in. 1,990 ft., 8¼-in. 2,213 ft., 7-in. 2,660 ft., S.D. orders 3,729 ft.

Louisiana Gulf Coast

(Continued from Page 66)

Orleans Parish

W. T. Burton 3 State-Lake Catherine, drilling shale 9,600 ft.

Plaquemines Parish

Gulf 1 State-QQ, Black Bay prospect, T.D. 11,071 ft., fishing.

St. Martin Parish

Superior 1 E. C. Sturat, Sec. 28 salt dome, drilling shale 8,259 ft.
Shell 2 Iberville Land Co., Happytown field, T.D. 10,586 ft., running electrical survey.

St. Mary Parish

Sun 1 Bell Isle Corp., Bell Isle dome, drilling sandy shale 7,856 ft.

Terrebonne Parish

Stanolind 1 State, Bay Junop sale dome, drilling sandy shale 5,127 ft.

Vermilion Parish

Union Oil Co. 4 Louisiana Land & Fur Co., 2 mi. NE of discovery well. Schooner Bayou field, drilling shale 6,645 ft.

North Louisiana-Arkansas

(Continued from Page 58)

NORTH LOUISIANA DRILLING REPORT

Caddo Parish

Walter Newstadt 1 McKee ..... NW SE 35-16-15
Set 10¾-in. casing 407 ft., drilling shale 2,475 ft.

Claiborne Parish

J. D. Caruthers, Tr. 1 Simmons unit C N½ SW 2-20-5w
Coring 8,415 ft.
V. A. Hardin et al 1 Valentine .... NW NW 31-20-6w
Set 5½-in. casing 6,430 ft., S.D. 6,507 ft., arranging to test.
Oakes, Caruthers & Morelock 1 Whitman ..... SW NW 2-20-5
While coring 5,409 ft. well blew out, killed and conditioning mud.

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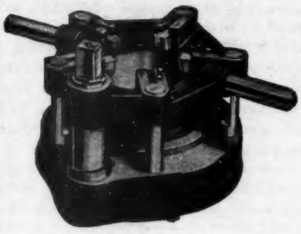

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CEDAR FALLS, IOWA

Ohio Oil Co. 15 Taylor ..... NE SW SE 15-23-8
Drilling 10,525 ft.
Union Prod. Co. 1-A Meadows ..... C NE 18-21-4
Drilling shale and sand 8,750 ft.

De Soto Parish

R. C. Swayles 1 Jackson ..... SE NW SW 36-12-14
Coring 2,028 ft.

Grant Parish

Fay Oil Co. 1 Swope SE SE 13-9n-1w
T.D. 3,135 ft., arranging to deepen.

La Salle Parish

Hope & Thompson 1 Louisiana Central
SW SW 25-11-2e
Set 10¾-in. casing 650 ft.

Sabine Parish

Roy Raines 1 Carter SW NW NW 27-9-11
T.D. 2,036 ft., S.D., waiting on orders.

Union Parish

Tiki Exploration Co. 1 Jones SE SE NW 30-21-3w
T.D. 3,200 ft., tested salt water 2,100 ft., S.D.

Winn Parish

Atlantic 1-C Goodpine SW SE 29-10-2w
Top Wilcox 1,399 ft., drilling sand and shale 3,555 ft.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Louark 1 D. E. Booth unit NE SW 20-17-19
1,272 bbl., 19/64-in. choke, C.P. 1,000 lb., T.P. 800 lb., set 6-in. casing 7,561 ft., T.D. 7,590 ft., Smackover lime.
Placid 2-B J. W. Booth ..... SW SW 20-17-19
200 bbl., 9/64-in. choke, T.P. 1,050 lb., C.P. 1,300 lb., old T.D. 7,670 ft., P.B. 7,623 ft., 5½-in. casing 7,670 ft., perf. 7,600-11 ft.

Lewisville—Lafayette County

East Texas Ref. 1 R. Buchanan estate .....
SE NE NW 19-16-23
Pumping 70 bbl., T.D. 3,450 ft.

Wildcat—Lafayette County

J. & J. Oil Corp. 1 J. E. Barnes .. SE SE SE 4-16-24
Dry, T.D. 2,283 ft.

Nick Springs—Union County

Delta Drlg. Co. et al 3 C. T. Grace .....
NW SE SE 31-17-14
174 bbl. oil, 113 bbl. salt water, 23/64-in. choke, 5½-in. casing 3,743 ft., perf. 3,690-3,701 ft., T.D. 3,750 ft., Travis Peak.
Fohs Oil 3 C. T. Grace NE SW SE 31-17-14
144 bbl., ¼-in. choke, T.P. 480 lb., C.P. 520 lb., 7-in. casing 3,766 ft., T.D. 3,773 ft., Travis Peak.

Champagnolle—Union County

Sam Sebersky 1-B Jerry ..... SW SW 21-17-14
Dry, T.D. 2,940 ft.

ARKANSAS DRILLING REPORT

Arkansas County

Jay Oil Co. 1 Trice NE SW 16-2s-3w
T.D. 200 ft., waiting on larger rig.

Clark County

W. P. Wilson 1 Hamilton & Mathews
SW NW 32-10s-20w
T.D. 1,572 ft., set 5½-in. casing 1,557 ft., testing casing.

Columbia County

Louark 1 Longino et al NW SE 10-18-10
Cutting and pulling stuck drill stem, T.D. 8,000 ft.

Dallas County

H. H. McBride et al 1 Southern Kraft Corp. ....
SE SW 16-9-16
T.D. 1,265 ft., S.D.

Lonoke County

Lunnon, Howell & Ford 1 City of Cabot .....
Lot 1, Blk. 6, 18-4n-9w
Drilling 1,320 ft.
J. F. Russell 1 J. T. Gunter .. NW NW SE 17-5n-10w
S.D. 2,785 ft.

Miller County

John Coats 1 Ochsenbien ..... SE NW 19-14-27
T.D. 2,762 ft., S.D.
Love, Owens & Carter 1 Montana Realty Co. ....
N½ SW SW 10-17-28
T.D. 4,010 ft., waiting on orders.

Prairie County

Hazen Oil Co. 1 Fidelity Mutual Life Ins. Co. ....
NE NE SW 16-2n-6w
T.D. 320 ft., waiting on casing.

Saline County

Tedford Drlg. Co. 1 Williams 31-3s-15w
Drilling 467 ft.

St. Francis County

D. T. Hargraves et al 1 Wilford . NE SE NE 29-4n-1w
Rigging up.

Union County

Harry Porter (formerly Barnsdall) 1 North Central Texas ..... NW NW NW 5-18-14
Old well drilled deeper, old T.D. 3,838 ft., washing to bottom.

EAST TEXAS BORDER DRILLING REPORT

Bowie County

J. G. Strahan 1 Lewis Fort, L. Peters Sur., set casing, T.D. 2,337 ft., waiting on cement.
Lee Timberlake et al 1 Smith, T. H. Hill Sur., drilling 1,567 ft.

Panola County

Holcombe & Thomason 15 Crenshaw, Thomas W. Cox Sur., drilling 5,058 ft.

Sabine County

Sterm & Womack 1 Kieth, L. Grace Sur., T.D. 6,173 ft., fishing.

Shelby County

Paull Pewitt et al 1 J. S. Swan, Ann Gray Sur., T.D. 5,105 ft., preparing to P.B.
Superior Oil Co. 5 Pickering, D. Gonzales Sur., drilling 2,867 ft.

EASTERN TEXAS FIELDS

Wood County Wildcat Finds Oil in Woodbine Sand

By R. MARNE SANFORD

DALLAS, Tex., Oct. 21.—Ever since the discovery of the East Texas field 10 years ago wildcatters have been drilling almost all over the East Texas basin seeking another major Woodbine sand field. According to latest reports at the close of the week a new discovery of yet unknown magnitude is in the making in Wood County, in the northern part of the East Texas basin and about 20 miles west and slightly north of the Gladewater side of the East Texas field.

Early in the week saturation was found in the test, Bobby Manziel 1 Morrison, Pollack Survey, in the Woodbine sand from 4,903-23 ft. No production tests have yet been made at the prospective well, casing plug being scheduled for drilling early this week. To show its geological relationship to nearby failures, it is correlated, according to Humble geologists, as 529 ft. higher than a failure to the northwest, 321 ft. higher than a failure by Hollingsworth 5 miles northwest, and 200 ft. higher, structurally, than production in the East Texas field.

The 5½-in. casing is set at 4,907 ft. after topping the Pecan Gap at 3,195 ft., and the Austin chalk at 4,505 ft. Elevation at the test is 423 ft. It is 3 miles north of Hawkins and 17 miles northwest of the town of Gladewater. The test was drilled on a 62-acre tract, Humble Oil & Refining Co. having 14,000 acres solid surrounding the 62-acre tract. The test is, however, near the western edge of the large Humble block. Three miles south of the strike 4 town lots in Hawkins were leased for $100 each, the lots averaging about 1 acre. Bobby Manziel plans to immediately move the rig from the discovery 4,000 ft. south for an outpost. Several thousand dollars are reported in escrow toward the drilling of a test by Sells Petroleum Co. and Delta Drilling Co. southwest of Haynesville.

The Hawkins area has long been regarded as one of the remaining prizes in the East Texas district, the Humble having both core-drilled and shot its large block surrounding the discovery. Royalty trading in the area, which has been gaining momentum daily, has pushed prices to as high as $500 per acre. Open leases were going from prices slightly in excess of $250 per acre.

All information regarding the prospective discovery has not been released by the operator, however, speculation is high as to whether the field will more nearly resemble East Texas in form or the Van field of Van Zandt County. The type structure more nearly conforms with the Van area. At any rate, production gages are expected to be available sometime this week, at which time the true significance of the well will be known.

Chapel Hill Field

After previously establishing a production gage of 136 bbl. of distillate in 18½ hours from perforations in the Pettit lime last week, Sun Oil Co. and Shell Oil Co., Inc., have plugged back their 1 Mosely and completed it for a new-horizon discovery from the Paluxy sand from the 5,800-ft. level. The well made 4.7 bbl. of 74-gravity distillate hourly from the Paluxy sand through perforations in casing from 5,785-5,810 ft. The well topped the Paluxy at 5,580 ft., massive anhydrite at 7,150 ft., Rodessa section at 7,546 ft., Pettit lime at 8,052 ft., Travis Peak at 8,254 ft., and was bottomed at 8,256 ft. This is the third producing level for the Trinity series field, the others being Pettit lime and the Rodessa section, Glen Rose.

EASTERN TEXAS COMPLETIONS

Franklin County

Talco field: Humble 3 Young, 105 bbl., pumping, 6 hr., 4,239-92 ft.

Freestone County

Cayuga field: Tide Water-Seaboard 1 Moody, 178 bbl., 8/8-in. choke, 4,015-20 ft.
Opelika field: Lone Star Gasoline and Shamrock 1 Lewis, 25,000,000 cu. ft. gas and 875 bbl. distillate, T.D. 8,005 ft.

Gregg County

Longview area: L. S. Flannery 3-A York, 35 bbl., tubing, per hour, 3,510-82 ft.
Shell 22 Fishburn, 26 bbl. in 30 minutes, tubing, 3,490-3,608 ft.
Kilgore area: Potter Brothers 2 W. N. Crim, 23 bbl. hr., 2-in. tubing, 3,540-68 ft.

Limestone County

Tehuacana field: Zephyr Oil 4 Peeples, 406 bbl., 30 per cent water, T.D. 2,658 ft.

Rusk County

Joiner area: C. H. Vaughn 12 Thrash, 60 bbl. hr., 2-in. tubing, 3,770-78 ft.
Cook Drlg. Co. 8 F. J. Cox, 30 bbl. hr., tubing, 3,629-32 ft.

Titus County

Talco field: Lucy Pet. Co. 20 Williams, 88 bbl. in 12 hr., pumping, 4,235-75 ft.

EASTERN TEXAS DRILLING REPORT

Anderson County

R. H. & W. Oil 1 Saunders, 17-acre tract in Joseph Ferguson Sur., in Frankston townsite, 5,000-ft. test, waiting on cement 15-in. at 75 ft.
Wright Drlg. Co. 1 Hart & Maberry, NE cor. J. W. Box Sur., S.D. 10 ft.
Brothers Oil 1 Cartmell, E. Ewing Sur., 4 mi. SW Palestine, first report.

Ellis County

W. E. Butler 1 A. M. Sims, 1 mi. SW Bristol on 8,000-acre block, S.D. 4,055 ft., top Austin 550 ft., Woodbine 1,055 ft., Buda 1,988 ft., Paluxy 2,654 ft., Glen Rose 2,787 ft., anhydrite 3,331 ft., Travis Peak 3,776 ft., elev. 485 ft.

Fannin County

H. T. Fleming 1 Welch, E. J. Allen Sur., 4 mi. NW Honey Grove, S.D. 90 ft
Damon Oil 1 A. L. Chaffin, SW cor. 85-acre tract, J. Ketcham Sur., 4 mi. NE Bonham, location cleared, prepare move in materials.

Freestone County

J. L. Collins (formerly Arkansas Fuel Oil) 1 Utley, Claypool Sur., flowed by heads 10 minutes then died, testing through perf. from 3,997-4,005 ft., T.D. 4,506 ft.

Hopkins County

L. A. Rankin 1 Chapman (formerly W. P. Vaughn 1 Chapman), Francis Hopkins Sur., preparing deepen from 3,934 to 6,000 ft.

Kaufman County

T. G. Shaw, trustee, 1 Agnes Wynne, B. S. Newman Sur., 8 mi. E Kaufman, lower Trinity test, base Massive 6,255 ft., T.D. 6,454 ft., C.O. to 5,000 ft., prepare resume fishing job.

Leon County

H. W. Hawker 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee, top Midway 3,850 ft., top Wilcox 5,470-5,770 ft., T.D. 5,904 ft., S.D. last report.

Limestone County

Frank Bryan 1 F. Bevill, J. H. Murray Sur., 1 mi. SW Horn Hill, top Georgetown lime 2,897 ft., top Pettit 4,765 ft., coring 4,775 ft.
C. L. Brown 1 E. Barron, NE NE S.A.&M.F. Sur., in a two-well deep Pettit lime field, first report.

McLennan County

Rush & Sanders 1 McBride, 47-acre tract in A. R. Valdez Sur., drilling 410 ft.
E. P. Campbell 1 Stewart, S. Burton Sur., 5 mi. N Waco, S.D. 360 ft.

Navarro County

L. A. Demer 1 E. F. Bain, 104-acre tract in John Duncan Sur., 3½ mi. N Bazzette field, first report.

Red River County

J. F. Morrissey 1 Tyler, James Miro Sur., 3½ mi. SE of Bogata, 5,000-ft. test, S.D. 1,873 ft.

Rusk County

Delta Drlg. Co. 1 Kangerga Brothers, R. Lane Sur., 8,500 ft. just north of Henderson, first report.

Upshur County

H. C. McGahey 1 Ludie Turner, SE cor. 200-acre tract in A. Butler Sur., top Pecan Gap 2,380 ft., base Pecan Gap 2,970 ft., S.D. 4,211 ft.

Wood County

Amerada Pet. 1 J. J. Lloyd, William Barnhill Sur., 7 mi. E Yantis, top Nacatoch 1,695 ft., Pecan Gap 2,592 ft., base Pecan Gap 2,785 ft., top Woodbine 4,483 ft., drill pipe stuck 5,952 ft.
Bobby Manziel 1 F. M. Morrison, James Pollock Sur., 4 mi. N Hawkins, 10-in. at 100 ft., top Woodbine sand at 4,902 ft., T.D. 4,921 ft., saturated from 4,902-4,920 ft., well checks 300 ft. high, casing set, plug not drilled.

Van Zandt County

T. G. Shaw 1 D. T. Riley, 100-acre tract in Leander Smith Sur., Glen Rose test, first report.

West Central Texas

(Continued from Page 61)

company's 1 Olson which opened the new field only a few weeks ago. The new test is in SW Section 181, B.B.B.&C. Survey.

As a deep Palo Pinto lime test in the shallow Gun-

sight lime producing Reid field of Jones County, John E. Farrell, Fort Worth, is drilling ahead below 3,375 ft. at 1 Kohler, SE cor. 110-acre tract in Section 32, D.&D. Survey. The field was opened in the 2,500-ft. Gunsight lime several months ago and this is the first deep test for the field. Six producers have been drilled from the shallow lime.

WEST CENTRAL TEXAS COMPLETIONS

Eastland County

Dobbs field: C. L. Mahaney 1 Jackson, 797 bbl., ¼-in. choke, top Caddo lime 2,539 ft., 300-qt. shot, 2,557-2,641 ft.

Erath County

Desdemonia field: T. G. Jackson 2 Taylor, 15 bbl., 3,349-75 ft.

Jones County

Reid field: J. E. Farrell 4 Mareska. 60 bbl. fluid, 40 per cent water, pay 2,586-95 ft., Gunsight lime.
Wildcat: Best 1 McDuff, J. J. Hughes Sur. 256, dry at 2,393 ft.

Shackelford County

Albany field: Hickey 1 Todd, dry at 538 ft.
Shackelford field: T. W. Lee & H. P. Key 9 Lee, dry at 1,180 ft.
Semiwildcats: L. H. Choate 2 J. F. Dyer, Sec. 74, Blk. 12, T.&P. Sur., dry at 1,270 ft.
Talvez Oil 1 J. F. Dyer, Sec. 84, Blk. 12, T.&P. Sur., dry at 1,252 ft.

Stephens County

Wildcat outpost to Fagg field: Tolbert 1 Martin, Sec. 1335, T.E.&L. Sur., 295 bbl. in 72 hr., ¾-in. choke, 3,885-95 ft.

WEST CENTRAL TEXAS DRILLING REPORT

Brown County

Hogan 1 Perry, NW part Sec. 1, Blk. 1, E.T. Sur., 1,000-ft. test, S.D.O. 820 ft.

Callahan County

N. D. Gallagher 1 E. Grisson, SE part Sec. 2, Blk. 8, S.P. Sur., top lime 1,695 ft., S.D. 1,703 ft.
Rhodes Drilling Co. 1 N. M. George, NW Sec. 75, O.A.L. Sur., 4 mi. E. Baird, 2,700-ft. test, prepare to spud.

Coleman County

Stuard 1 Minear, E. V. Otaw Sur. 244, location.

Comanche County

Campbell 1 Stark, SW part of Asa Hoxey Sur., drilling 475 ft., 1,000-ft. test.
C. L. Lane 1 H. W. Strout, 3,080 ft. from N, 2,200 ft. from E lines of E. D. Corbett Sur., Abst. 154, P.B. to 3,660 ft., 200-qt. shot, testing 3,044-52 ft., testing after acid.
Lone Star 1 Watkins, Sec. 30, Blk. 3, B.B.B.&C. Sur., 3,000-ft. test, drilling 2,578 ft.

Concho County

Natural Resources 1 Armor, Sec. 105, T.&N.O. Sur., 5 mi. NE of Eden, prepare to resume drilling at 1,565 ft., contract depth 3,250 ft., to Ellenburger lime, cleaned out to 1,500 ft

Eastland County

Dobbs Oil 1 Poe, Sec. 37, Blk. 3, H.&T.C. Sur., top Caddo lime 2,888 ft., T.D. 2,890 ft., last report.

Fisher County

F. A. Stephenson 1 Maberry, SE SW Sec. 56, Blk. 1, H.T.&B. Sur., 3,400-ft. test, cored 3,285-3,302 ft., recovered sand showing oil, set casing, drilled plug, 800 ft. O.I.H., 5½-in. at 3,271 ft., swabbing and flowing by heads 3,302 ft., S.D., no test.
General Crude Oil 12 Flanigan, center of old Royston field, Ordovician test, drilling 2,615 ft.

Hamilton County

A. J. Caldwell 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines, W. H. Crowder Sur., rigging up to drill deeper below 3,010 ft.
C. J. Meyers 1 Oats, 420 ft. from S and 1,035 ft. from E lines, F. Hughes Sur., 4,000-ft. test, drilling 815 ft.

Haskell County

Bradford & Robertson et al 1 Coody, SW cor. N. Hapgood Sur., Palo Pinto lime test, coring below 3,400 ft., Palo Pinto lime dry.

Hood County

Aztec Oil 1 Gallagher, 500 ft. from S and 1,326 ft. from E lines of Robert Alway Sur., 3,000-ft. test, drilling 935 ft.

Jones County

T. D. Humphrey 1 Leslie & Lipman, 2,705 ft. from N and 4,320 ft. from E lines of Sec. 18, Blk. 15, T.&P. Sur., 2,800-ft. test, spudding.

Parker County

Brown & Gardner Bros. 1 Gilbert, T.&P. Sur., Abst. 1958, fishing tools 4,800 ft., T.D.
C. Leidecker and William Holland 1 J. A. Boyd, NE NE of S 100 acres of A. J. Edwards Sur., 4,500-ft. test, S.D. 2,410 ft.

San Saba County

Three Widows Oil 1 Ballard, NW cor. S½ Sec. 80, H. Behrenroth Sur. 506, 2,000-ft. test, 10-in. at 462 ft., drilling 1,080 ft.

Shackelford County

Carson 1 Elliott, Sec. 49 B.A.L. Sur., resumed drilling after being S.D. at 1,685 ft., Caddo lime test to 3,620 ft., saturation in Caddo lime 3,614-21 ft., set casing for test.

Tarrant County

Hickey 1 Baltzelle, NE cor. William Scott Sur., fishing casing 935 ft.

Taylor County

Ce-beth Oil 1 City of Abilene, south shore of Lake Abilene on city property, 4,000-ft. test, corrected report, drill pipe stuck, T.D. 1,940 ft., S. D.
K. B. Nowles 1 Hardin-Simmons Univ., S½ NW Sec. 36, Lunatic Asylum lands, 9½ mi. S Abilene, S.D. 38 ft.

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Two More East Ohio Clinton Tests Are Abandoned as Dry

By STAFF CORRESPONDENT

NEWARK, Ohio, Oct. 21.—The Clinton sand prospects in northeastern Ohio received another setback this week with the test of the East Ohio Gas Co. on S. L. Mather, Lot 15, Concord Township, Lake County, coming in dry in that horizon. The Clinton was found at 3,354-3,415 and 3,418-24 ft., both streaks being dry. The well is now shut down at 3,626 ft. The same company is plugging the Kirkland Township test which was dry in the Clinton and drilled 50 ft. in the Medina.

The Oriskany test in Harrison County is a disappointment. Frank Stranges et al 1 B. B. Barclay, Section 29, Moorefield Township, topped the sand at 4,327 ft. with water coming in at 4,328 ft., still drilling.

Of the 29 tests completed, 15 are gas wells, 10 are dry, 4 are small oil pumpers.

Athens County

Canaan Township: Nuzum 1 George G. Gaul, Sec. 17, 75,000 cu. ft. gas, second Berea, T.D. 1,425 ft.
Ohio Fuel 1 E. B. Nutter, Sec. 16, show oil and gas, shot, no increase, plugged, second Berea, T.D. 1,424 ft.
Carthage Township: Matthews et al 1 R. E. Calvert, Sec. 30, dry, Injun (water), T.D. 955 ft.
Rome Township: Gibson et al 2 W. H. Morrison, Sec. 30, 2 bbl., shot, first Cow Run, T.D. 433 ft.
Ohio Fuel 1 Clarence Petty, Sec. 7, dry, Berea, T.D. 1,703 ft.
York Township: Cody 1 Earl White, Fraction 32, dry, Salt sand, T.D. 403 ft.

Cuyahoga County

Mayfield Village: Benedum & Trees 2 R. H. Ford, Lot 16, 1,000,000 cu. ft. gas and 20 bbl., Newburg, T.D. 2,895 ft.

Lake County

Kirkland Township: East Ohio 1 F. O. Andrews, Lot 90, dry, Clinton 3,610-20 ft. and 3,636-42 ft., Medina 3,706-56 ft.

Newark Field—Licking County

Mary Ann Township: Ohio Fuel 1 R. P. Mahaffey, Sec. 15, 1,200,000 cu. ft. gas, shot, Clinton 2,684-2,715 ft.
Newark Township: S. D. McCloy 1 R. J. Owens, Lot 2, third quarter, 1,020,000 cu. ft. gas, shot, Clinton 2,330-54 ft., T.D. 2,358 ft.
James McCloy 1 Mary Christian, Lot 4, third quarter, dry, Clinton, T.D. 2,402 ft.
Ohio Fuel 2 Willus Long, first quarter, dry, Clinton, T.D. 2,440 ft.

Lorain County

Pittsfield Township: Ohio Fuel 1 J. E. Caley, Lot 121, 50,000 cu. ft. gas, shot, Clinton, 2,263-73 ft., T.D. 2,350 ft.

Meigs County

Bedford Township: Bowman 1 Frank Jones, Sec. 18, 100,000 cu. ft. gas, shot, second Berea, 1,626-36 ft., T.D. 1,647 ft.
Rutland Township: Bengel 1 C. Pierce, Sec. 26, 32,000 cu. ft. gas, Salt sand, T.D. 655 ft.

Monroe County

Bethel Township: Luburgh 26 Henry Swartz, Sec. 10, 2 bbl., not shot, first Cow Run (Germantown sand dry), T.D. 1,050 ft.
Center Township: Ward 1 Joseph McFadden, Sec. 1, 150,000 cu. ft. gas, lime, T.D. 1,306 ft.

Muskingum County

Brush Creek Township: Palmer & Geisinger 1 Clyde Swingle, Sec. 17, 320,000 cu. ft. gas, shot, Clinton 3,995-4,021 ft., T.D. 4,056 ft.
Licking Township: Kinsey & Spencer, Lot 8, fourth quarter, dry, Clinton, T.D. 3,340 ft.

Noble County

Noble Township: Harper 1 John Hayes, Sec. 34, 3 bbl., 300 ft. sand, T.D. 239 ft.

Perry County

Clayton Township: Pure Oil 1 Bert Williams, Sec. 7, dry, showed ½ bbl. and 12,000 cu. ft. gas, Clinton, T.D. 3,312 ft.

Stark County

Lake Township: White estate 1 David Booth, Sec. 27, 230,000 cu. ft. gas, Clinton, T.D. 4,535 ft.

Tuscarawas County

Fairfield Township: Brendel 1 George B. Amos, Sec. 13, 900,000 cu. ft. gas, shot, Clinton, T.D. 4,982 ft.
Brendel 7 E. L. Dessecker, Sec. 15, 700,000 cu. ft. gas, shot, Clinton 5,006-89 ft. T.D. 5,101 ft.
Lawrence Township: Ohio Fuel 1 H. D. Held, Sec. 14, 100,000 cu. ft. gas, shot, Clinton, T.D. 4,521 ft.

Washington County

Barlow Township: Beren et al 1 M. Male, Sec. 1, dry, Maxon, T.D. 1,440 ft.
Grandview Township: Knob Oil Co. 9 J. W. Pryor, Sec. 21, 1 bbl., Keener, T.D. 1,674 ft.
Liberty Township: Best Run O. & G. Co. 1 D. V. Warren, Sec. 21, 40,000 cu. ft. gas, Germantown sand (Keener dry), T.D. 1,320 ft.
Ludlow Township: Cline et al 1 O. J. Cline, Sec. 28, 80,000 cu. ft. gas, Injun and Berea, T.D. 2,089 ft.
Independence Township: Herlan 1 E. S. Drecker, Sec. 34, dry, Squaw, T.D. 1,799 ft.

INDIANA

EVANSVILLE, Ind., Oct. 21.—Indiana had a quiet week as 10 wells were completed. Of these, six were dry while the four producers had a total initial production of 1,077 bbl. All were in Gibson and Posey counties.

INDIANA COMPLETIONS

Daviess County

B. Ruble 2 B. L. Walker.....NE SE SW 4-2n-5w
Dry, 613 ft.

Gibson County

Lewis Prod. 13-D Cooper .... SE SE NW 13-3s-14w
Pumped 155 bbl. oil, pay 2,853-65 ft., T.D. 2,878 ft., P.B. to 2,865 ft.

Porter County

Norris & Brown 1 Biggs.....SE NW SE 19-36n-5w
Dry, T.D. 370 ft.

Posey County

C. T. Somers et al 1 Hill ..... NE NE NE 2-4s-14w
Dry, water at 2,710-18 ft. and 2,865-71 ft., T.D. 3,127 ft.
W. C. McBride 3 Swanders ... SW NW NE 4-4s-14w
Flowed 535 bbl. oil, perf. 2,540-47 ft. and 2,606-47 ft., T.D. 2,806 ft.
Continental 2 Kleiderer .... NE NE NE 33-3s-14w
Flowed 327 bbl. oil, 2,000 gal. acid, T.D. 2,893 ft.
J. E. Crosbie 6 Keck .....NE SE NE 4-2n-5w
Pumped 60 bbl. oil, 2,512-16 ft., 2,570 ft.

Spencer County

Blosser et al 2 Harvey .....NE SW NW 4-8s-6w
Dry at 1,072 ft.
Bright Dev. 1 Luckadoo ..... NW NE SW 8-8s-6w
Rig abandoned.
Snell et al 1 Graham ..... SE NW NE 15-6s-7w
Dry, Ste. Genevieve 1,455 ft., H.F.W. 1,560-70 ft.
Bower Hoover et al 4 Rothert ..... NW NW 1-5s-6w
Dry, Vienna 674 ft., Tar Springs 692 ft., Glen Dean 773 ft., T.D. 778 ft.

INDIANA DRILLING REPORT

Dubois County

A. J. Wise 1 Hoph .....NW SE NW 12-2s-5w
Spudded, first report.

Gibson County

Newton, P. L., 1 Mary E. Carrithers .....
SW NW SW 25-1s-10w
H.F.W. 1,801-03 ft.

Knox County

W. C. McBride 1 Met. Life Co.....SE SE NW 24-2n-11w
Ste. Genevieve 1,798 ft., pay 1,827-34 ft., flowed through drill stem, drilling 1,846 ft.

Martin County

Collier & Burton 1 Swayze ...NW NE NE 10-3n-4w
Glen Dean 212 ft., Golconda 298 ft., show oil 330-35 ft., drilling 335 ft.

Posey County

E. Hollman 1 Oeth.....NE SE NE 6-4s-13w
Rig, first report.
Basin Drlg. Co. 1 Oakland City College .....
SE SE NW 16-8s-14w
Pumped 86 bbl. in 23 hr., 30-qt. shot, 2,535-84 ft., will drill deeper.

Vanderburg County

Burr Lambert 1 Niederhans... SE SE NW 22-4s-10w
Menard 1,402 ft., drilling 1,530 ft.

EASTERN KENTUCKY OPERATIONS

ASHLAND, Ky., Oct. 21.—The attention of eastern Kentucky oil men has been sharply directed at Greenup County this week with the drilling in of a wildcat well which Operator William F. Foreman says will make 10 bbl. of oil daily. The well is located on the E. E. Bailey farm on Frazier Branch about 1¼ miles from Oldtown and only a mile from a hard-surface road.

The well reached a total depth of 851 ft. but was plugged back to the 793-ft. level in Berea and shot. Foreman said a gas pay, about 15 or 20 ft. above the oil pay, is producing over 100,000 ft. of gas and by means of tubing inside the capped casing the gas pressure may eliminate necessity of pumping the well.

Three other wells have been drilled in the Oldtown vicinity in the past two decades. Two were less than a thousand feet while the third was said to have neared the 1,800 or 2,000-ft. level. Available data indicate that these wells were 4 or 5-bbl. oil producers but lack of pipe-line or transportation facilities, at the time they were drilled in, is said to have prevented further development. Also when the small Greenup County wells were brought in, Elliott County and other Big Sandy operations were in the spotlight and the high cost of building a pipe line turned attention away from the greenup County field.

The well is being cleaned out and it is probable that it will be capped while another well is drilled in the near vicinity.

One gas-well completion, report of a dry hole and listing of four new locations mark other eastern Kentucky operations this week.

The Inland Gas Corp. has completed No. 216 on the H. H. Smith land on Mill Creek in Knott County at a total depth of 2,988 ft. in white slate. The well is making 561,000 ft. of gas, 24 hours, with 350 lb. rock pressure.

Hall & White got a dry hole in well No. 1 on the Willie Price land on Deer Lick in the Ida May district of Lee County.

WESTERN KENTUCKY OPERATIONS

OWENSBORO, Ky., Oct. 21.—Six oil wells, one gas well and four dry holes represent the completions in western Kentucky during the past week.

Daviess County

Handyville district: Stewart & Snyder 5 Anna Ezell, 170 bbl., 120-qt. shot, Jett 1,255-79 ft., T.D. 1,281 ft.
Utica district: Baldwin 6 A. A. Westerfield, 385 bbl., 140-qt. shot, Bethel 1,437-61 ft.

Hancock County

Saunders School district: W. Richards et al 1 Ralph Ashworth, est. 10 bbl., 50-qt. shot, Jett sand, 463-77 ft.
W. J. Flesher 3 Quissenberry heirs, rigging up.
Easton district: W. J. Flesher 5 Font Richards, dry through Jett sand, T.D. 362 ft.

Henderson County

Bluff City district: R. M. Cooper et al 1 W. D. Fulton, good oil show lower McClosky.
Hebbardsville district: Connell 2 M. C. Bennett 30 acres, abandoned location.

Logan County

5½ mi. SW of Russellville: A. A. Peard 1 C. M. Darden, dry, T.D. 1,400 ft.

McLean County

Island district: South Penn 1 John Kirtley, dry through McClosky, T.D. 2,200 ft.
Nuckols district: Cobb 4 Lee King, 25 bbl., 40-qt. shot, Barlow sand, 901-9 ft., 40-qt. shot, Bethel 965-77 ft.

Ohio County

Sunnydale district: J. W. Tuttle 10 Lena Berry, 15 bbl., 25-qt. shot, Pottsville sand, 182-97 ft., T.D. 200 ft.
Tuttle 11 Lena Berry, location.

Webster County

Sebree district: I. B. Browning et al 1 E. H. Sellers, flowing 250 bbl., 24 hr., 2,000 gal. acid, McClosky 1,388-92 ft., T.D. 1,400 ft.
Sebree Oil & Gas Co. 7 J. R. Ramsey, 300,000 cu. ft. gas, 410 R.P., Cunningham 1,230-50 ft., T.D. 1,435 ft.

Southwest Texas Fields

(Continued from Page 62)

SOUTHWEST TEXAS COMPLETIONS

Jim Wells County

Gallagher field: M. M. Miller 1 Machen, dry, T.D. 5,685 ft.
Wade City field: Anderson-Prichard 5 Muellar, 132 bbl., 9/64-in. choke, perf. casing 4,909-13 ft., T.D. 4,929 ft.
Atlantic 2 Muellar, 110 bbl. fluid, 30 per cent salt water, ½-in. choke, T.D. 4,930 ft.
Magnolia 4 Schmidt, 105 bbl., ¼-in. choke, perf. casing 4,915-18 ft., T.D. 4,960 ft.
H. R. Smith 2 Thiel, dry, T.D. 4,985 ft.

Nueces County

Agua Dulce field: Richardson Petroleum Co. 3 McKay, 190 bbl., ½-in. choke, perf. casing 6,814-20 ft., T.D. 7,050 ft.
Clara Driscoll field: Phillips 1 Crystal-Gandy, 32 bbl. oil and 15 bbl. salt water, jetting, T.D. 5,948 ft.
Shield field: Stanolind 1 Ocker, 57 bbl. oil and 18 bbl. salt water, ⅛-in. choke, perf. casing 6,614-22 ft., T.D. 6,632 ft.

Refugio County

Tomoconnor field: Quintana 40 Heard, 552 bbl., ¼-in. choke, perf. casing 5,852-60 ft., T.D. 5,925 ft.

San Patricio County

McCampbell field: Moran Gas Co. 1 Kuchs, 25 bbl. distillate and 100 bbl. salt water, ¼-in. choke, perf. casing 7,436-50 ft., T.D. 7,494 ft.
Midway field: Stanolind 1 Corpus Christi Trust Co., 89 bbl. oil and 59 bbl. salt water, 5/32-in. choke, T.D. 5,327 ft.
Wildcat: British American 1 Hunt, dry, T.D. 7,054 ft.

Victoria County

Bloomington field: Texas Gulf 1 Maupin, 15 bbl. distillate, 25,000,000 cu. ft. gas, ¼-in. choke, perf. casing 5,108-11 ft., T.D. 6,011 ft.
Heyser field: Gulf 42-B Traylor, 173 bbl., ¼-in. choke, sand 5,496-5,500 ft., T.D.

SAN ANTONIO DISTRICT

Bexar County

Gas Ridge field: Southwest Drilling Co. 3 Covell, 2 bbl., pumping, T.D. 435 ft.

Wildcat: Joe Noake 2 Medina Irrigation Farms, gas well, T.D. 1,231 ft.

Caldwell County

Bee Creek field: Ralph Ogden 4 Miears, 70 bbl. oil and 4 per cent salt water, pumping, T.D. 2,239 ft.

Guadalupe County

Elm Creek field: E. A. Weyel 3 Mattke, 3 bbl., pumping, top sand 684 ft., T.D. 730 ft.

LAREDO DISTRICT

Brooks County

Kelsey field: Humble 72 McGill, 116 bbl., ⅛-in. choke, T.D. 4,719 ft.
Wildcat: Sun 1 Boedeker, dry, T.D. 8,748 ft.

Duval County

Bridwell field: Bridwell Oil Co. 2-B Rogers, dry, T.D. 4,657 ft.
Cedro Hill field: Magnolia 14 Duval County Ranch Co., 10 bbl., ¼-in. choke, perf. casing 1,460-63 ft., T.D. 1,464 ft.
Driscoll field: Continental 2-B Driscoll, dry, T.D. 4,035 ft.
Lundell field: Government Wells Oil Co. 45 Lundell, 62 bbl. in 12 hr., ⅜-in. choke, sand 1,551-60 ft., T.D.
Magnolia 11 Duval County Ranch Co., 25 bbl. oil and 15 bbl. water, pumping, sand 1,535-39 ft., T.D.
Wildcat: Adolph Dovre 2-B Worden-Drought, dry, T.D. 1,254 ft.
Magnolia 1 Duval County Ranch Co., gas well, perf casing 1,003-06 ft., T.D. 2,212 ft.

Jim Hogg County

Colorado field: C. Andrade 1-F Trevino, 100 bbl., 5/32-in. choke, perf. casing 2,948-56 ft., T.D. 2,982 ft.

Live Oak County

White Creek field: Holland et al 2 Cox, 40 bbl., pumping, perf. casing 1,301-20 ft., T.D. 1,494 ft.

Starr County

Boyle field: Fidelity Oil & Royalty Co. 3-A Carruth, 81 bbl., ⅛-in. choke, perf. casing 3,499-3,507 ft., T.D. 3,511 ft.
Rutherford 4 Carruth, dry, T.D. 3,562 ft.
Rincon field: W. R. Davis 34-B Slick, 188 bbl., ¼-in. choke, perf. casing 4,110-40 ft., T.D. 4,450 ft.
Sun field: Sun 4-B Speer, 33 bbl., 9/64-in. choke, perf. casing 4,648-50 ft., T.D. 5,027 ft.

Webb County

Oilton field: Cox & Hamon 4 J. D. Long, 10 bbl., ¼-in. choke, sand 1,920-26 ft., T.D. 2,452 ft.
West Cole field: Magnolia 12-A Benavides, dry, T.D. 2,375 ft.

Zapata County

Cuellar field: W. H. Holland 1 Cuellar, dry, T.D. 1,805 ft.
Glen field: Jay Simmons et al 1 Yeager-Stroman, 50 bbl. an hour open tubing, sand 2,172-84 ft., T.D.

SOUTHWEST TEXAS DRILLING REPORT

Aransas County

Gulfboard 1-239 State, Mud Island prospect, in Aransas Bay, drilling shale 4,650 ft.

Brooks County

West Production Co. 1 Ehlers, 3 mi. NE of Falfurrias, drilling shale 7,210 ft.

Duval County

Humble 1 Central Securities Co., Diego Ynojosa Sur., cored sand, oil odor 4,644-50 ft., twisted off drill collar, fishing.

Goliad County

Renwar Oil Corp. 1 Swickheimer, 3 mi. SE of Fanning, drilling sandy shale 3,020 ft.

Hidalgo County

Humble 1 American Life Insurance Co., Missouri Texas Land & Irrig. Co. subdivision, Lot 1, Blk. 13, drilling shale 7,152 ft.

La Salle County

H. R. Cullen 1-B Wildenthal, 2 mi. SW of Cotulla, drilling shale 6,156 ft.

Willacy County

Pan American Production Co. 1 Garcia, 14 mi. E of Lyford, T.D. 9,002 ft., 7-in. casing 8,834 ft., waiting on cement.

Zapata County

Texas 136 Measles, 4½ mi. NW of Jennings field, S.D. 1,624 ft.

TEXAS GULF COAST

Gas and Distillate Found in Bailey's Prairie Test

By F. L. SINGLETON

HOUSTON, Tex., Oct. 21.—A new gas and distillate field was being opened in the Texas Gulf Coast district as Glenn H. McCarthy 1 W. B. Munson, located on the Bailey's Prairie prospect, Brazoria County, was flowing gas, distillate and wash water while cleaning out through a ⅛-in. choke. Tubing pressure was 500 lb. This well has been in the process of completion for several months. It is one of the deepest tests drilled in the district, having reached a total depth of 11,860 ft., and casing was cemented to test a series of sand sections logged by an electrical survey at intervals from 10,300 ft. to the total depth. Several tests recovered oil, gas, and distillate, but due to salt-water encroachment no commercial production was developed, and the final completion was made by making a series of cement-squeeze jobs and re-perforating casing at 11,615-48 ft. The well is situated about 8 miles southwest of Angleton in the Samuel Carter Survey.

In the Rowan field, Brazoria County, and located about 2,000 ft. east of production, Rowan & Nichols Oil Co. 1 Lee Bradbury is shut down waiting on orders after the well flowed salt water with a trace of distillate when tested through perforated casing at 8,980-90 ft. This sand carried a gas and distillate odor when cored, and the well is expected to be plugged back and completed in the regular pay which was topped at 8,554 ft. Southeast of the discovery well, Stanolind 1 Hodnett is bottomed at 9,006 ft. with 5½-in. casing cemented on bottom. The Marginulina was topped at 7,710 ft. The well cored showings of oil in the 8,500-ft. pay and logged gas and distillate showings in the deeper sand at intervals from 8,730-8,988 ft.

Helmerich & Payne 1 Octave Herman, located on the Sugar Valley prospect, Matagorda County, was being watched with much interest as it cores ahead in shale below 8,473 ft. Sand and shale with an oil show is reported to have been logged at intervals from 8,073-91 ft. Location is in the B. Burnett and A. S. Sojourner Survey, about 7½ miles east of Bay City.

Retesting Ganado Pool Opener

Pure Oil Co. 1 Spacek, a prospective pool opener southwest of the town of Ganado, Jackson County, is preparing to retest after it flowed 70 bbl. oil and 90 bbl. salt water on a 10-hour production test through perforated casing at 5,466-86 ft. Working pressure built up to 380 lb. This is the second test to be made in the 5,400-ft. horizon and the next test is expected to be made at approximately 5,200 ft. Other sands showing favorable indications are reported to have been logged at 5,000 ft. and 4,900 ft.

The Dyersdale (Mount Houston) field, Harris County, received its second producer as H. C. Cockburn 2 Burkett, a west offset to the discovery well, flowed 520 bbl. of 22.3-gravity oil on a 24-hour potential test through a ¼-in. choke. The discovery pay was topped at 4,056 ft., and the completion was made by perforating casing at 4,062-72 ft. Rules and regulations issued by the Texas Railroad Commission the past week give the field a 20-acre spacing program with wells located on a 660-330 pattern. Proration is governed two-thirds on acreage and one-third on a per-well basis. All acreage must be within a distance of 1,050 ft. from the well to be credited to the 20-acre unit.

In the same county and located about 1,000 ft. northeast of the discovery well of the Ogburn field, Richardson et al 1 Baskins has been completed as a distillate producer although no gage was available. Drilled to a total depth of 6,938 ft., the well was completed in the discovery pay through perforated casing at 6,928-34 ft. On the extreme northwest side of the field in the H.&T.C. Survey, Section 3, Block 2, L. M. Josey staked location for 1 fee. The location is about 1,000 ft. west of W. L. Goldston 1 Josey which is the only crude-oil producer in the field, having been completed in the 6,600-ft. sand.

Development along the Wilcox trend continues to be increased as locations for three wildcats were announced. East of the town of Leggett in the I. D. Thomas Survey, Polk County, John G. Mayo et al let contract for 1 Texas Long Leaf Lumber Co. In Montgomery County, and east of the town of Magnolia, Superior Oil Co. staked location for 1 T. A. McWhorter, a projected 8,000-ft. test. In the Cold Springs area, McDannald Oil Co. is moving in material for 1 Coline Oil Co. in the James Rankin Survey. The location is north of Shell Oil Co., Inc., 1 Coline Oil Co., which logged interesting showings in the Wilcox formation. East of the present location, the same company made tentative location for 1 Foster Lumber Co. in the George Taylor Survey.

In the Port Neches field, Orange County, Texas Co. 8-B Smith, ½ mile south of production, was reported to be flowing pipe-line oil while cleaning out through a ¼-in. choke from perforated casing at 4,600-22 ft. Total depth is 5,548 ft. and 5½-in. casing was cemented at 5,545 ft.

TEXAS GULF COAST COMPLETIONS

Brazoria County

Manvel field: Texas 25-A Belcher, dry, T.D. 6,204 ft.
Old Ocean field: Harrison & Abercrombie 1 Beal, 241 bbl., various chokes, top sand 10,025 ft. T.D. 10,912 ft.
Harrison & Abercrombie 1 Chenault-Hammond, 238 bbl., various chokes, top sand 9,990 ft., T.D. 10,217 ft.
Harrison & Abercrombie 1 F. W. Dailey, 407 bbl., ¼-in. choke, top sand 10,085 ft., T.D. 10,215 ft.
Harrison & Abercrombie 1 Wilson-Hughes, 399 bbl., ¼-in. choke, top sand 10,100 ft., T.D. 10,209 ft.

Chambers County

Anahuac field: Gulf 11 Knowles, 475 bbl., ¼-in. choke, top sand 7,030 ft., T.D. 7,056 ft.
Humble 34 Johnson, 737 bbl., ¾-in. choke, top sand 7,202 ft., T.D. 7,227 ft.

Fort Bend County

Thompson field: Gulf 8-B Wolters, 144 bbl., ⅛-in. choke, top sand 5,413 ft., T.D. 5,430 ft.
Wildcat: Titanic Oil Co. 1 Mozola, dry, T.D. 8,328 ft.

Harris County

Wildcat: Cities Service Co. 1 Kuehn, dry, T.D. 8,511 ft.

Jackson County

Ganado field: Texas 5 Mortgage Land Co., 28 bbl., ⅛-in. choke, top sand 5,085 ft., T.D. 5,099 ft.
Lolita field: Wellington Oil Co. 5 L. Ranch Co., 96 bbl., ⅛-in. choke, perf. casing 6,398-6,404 ft., T.D. 6,405 ft.
Mauritz field: Coastal Drilling Co. 2-A Mauritz, dry, T.D. 5,489 ft.
West Ranch field: Magnolia 3 Turner, 317 bbl., ⅛-in. choke, top sand 5,753 ft., T.D. 5,768 ft.
Wildcat: Crosby Drilling Co. 1 Four Way Ranch, dry, T.D. 6,511 ft.

Liberty County

Hull field: Thomar Oil Co. 1 Brown, 34 bbl., pumping, T.D. 4,083 ft., top sand 2,055 ft., P.B., T.D. 2,075 ft.

Orange County

Wildcat: Dick Schwab 1 Stark & Brown, dry, T.D. 7,324 ft.

Polk County

Segno field: Humble 28-B Kirby Lumber Co., 171 bbl., ¼-in. choke, top sand 8,101 ft., T.D. 8,175 ft.

Tyler County

Joe's Lake field: Republic 44 fee, 401 bbl., ¾-in. choke, top sand 7,660 ft., T.D. 7,705 ft.

Wharton County

Withers field: F. W. Michaux 1 Melcher, 109 bbl., ⅛-in. choke, top sand 5,536 ft., T.D. 5,546 ft.

TEXAS GULF COAST DRILLING REPORT

Brazoria County

Phillips 1 Houston Farms Development Co., Chocolate Bayou field, drilling shale 6,315 ft.
Phillips 1 Triangle Development Co., Chocolate Bayou field, drilling shale 8,220 ft.

Colorado County

W. R. Davis 1 Brownson, E. S. Wooley Sur., T.D. 6,874 ft., 9⅝-in. casing 2,983 ft., move in large rig to drill to Wilcox.
Moore & Ahern 1 Kimbler, SE of New Ulm, drilling shale 3,410 ft.

Chambers County

Humble 1 E. O. Mauboules, 1 mi. S of Anahuac field, top Marginulina 7,000 ft., coring shale 7,203 ft.
Humble 3-A-248 State, Galveston Bay, top Frio 8,596 ft., drilling shale 9,230 ft.
Humble 6-B-300 State, Galveston Bay, drilling shale 5,890 ft.
Humble 2-C-46 State, Galveston Bay, drilling shale and sand 7,191 ft.
Shell 1-199 State, Galveston Bay, drilling shale 9,092 ft.

Galveston County

Stanolind 1 Lobit, Alta Loma field, drilling shale and lime 8,575 ft.

Hardin County

W. G. Christian 1 Guedry, 6 mi. SE of Batson, top Round Marginulina 4,280 ft., S.D., T.D. 5,091 ft.

Lavaca County

M. H. McMurray et al 1 A. C. Allen, M. Muldoon Sur., drilling shale 3,125 ft.

Liberty County

Gulf 1 Phoenix Development Co., deep test, SE flank Hull field, drilling shale 8,739 ft.

Matagorda County

Ohio Oil Co. 1 Blackburn, Sugar Valley prospect, drilling shale 7,880 ft.

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Among the Drilling

GREY & WOLFE, Houston, Tex., are moving a rotary to Montgomery County, Gulf Coast Texas, for Superior Oil Co. of California's No. 1 T. A. McWhorter, a projected 8,000-ft. wildcat located east of the town of Magnolia.

McDANNALD Drilling Co., Houston, Tex., is moving in material to San Jacinto County, Gulf Coast Texas, for No. 1 Coline Oil Co., a Wilcox test located about 4 miles south of Cold Springs in the James Rankin Survey. Tentative location was made about 2½ miles east of the location for a second test to be drilled on the Foster Lumber Co.

GROOVER & ROSE, contractors of Albany, Tex., are drilling a deep test in Shackelford County, West Central Texas, for John E. Carson as his No. 1 R. A. Elliott, located in Section 48, B.A.L. Survey. On the southwest flank of the old Ibex fold, the well encountered an encouraging show of oil recently in the Caddo lime, offering possibilities of extending production in the Ibex field to the south. Saturation in the Caddo was found from 3,614-21 ft. Casing has been set for a production test after the section has been acidized.

GEORGE ECHOLS, Houston, Tex., drilling for his associated company, Titanic Oil Co., abandoned No. 1 Mozola, a wildcat in Fort Bend County, Gulf Coast Texas, while a second distillate producer was completed in the Edwards Ranch field, Victoria County. In the Louisiana coast, drilling continues below 7,500 ft. at Titanic Oil Co.'s No. 1 Marrero Land & Development Co., a wildcat located west of New Orleans in Jefferson Parish.

CLARK & COOPER, contractors of Midland, Tex., have completed a ¾-mile-west extension to the Eaves field of Lea County, New Mexico, for Hamon Krupp and A. H. Flaherty and are moving rig north one location for an offset. The new extension producer was No. 1-C Moberly-State, C. NW SE Section 21-26e-37s. It made 500 bbl. of oil daily, natural, the best of a few oil producers in this almost totally gas field.

ROWAN Drilling Co., Houston, Tex., is testing No. 1 Bradbury, an outpost test located in the Rowan field, Brazoria County, Gulf Coast Texas, which is being drilled jointly with Nichols Oil Co. In the same field, another rotary is running for Stanolind Oil & Gas Co. on the Hodnett lease, and casing was cemented for a production test. Another operation is reported in Jefferson County, while in coastal Louisiana, one rotary is operating for Tide Water Associated Oil Co.

WHITMAN Drilling Co., Houston, Tex., is moving a rotary to Jackson County, Texas Gulf Coast, for its No. 1 S. G. Durshel, a wildcat test located about 5½ miles northwest of Edna in the F. Rodriguez Survey. Contract depth is 5,400 ft.

M. J. DELANEY, contractor of Dallas, Tex., has been awarded contract for American Liberty Oil Co. and Cranfill Brothers' No. 11 Tubb, a deep Ordovician projected test in the new Tubb field of Crane County, West Texas. It is 440 ft. from the south line and 1,530 ft. from the east line of Section 11, Block 27-B, P.S.L. Survey, north offset to the Gulf Oil Corp. and Cranfill Brothers' No. 1-A Tubb, discovery well for the new Ordovician spot several months ago.

GLENN H. McCARTHY opened gas and distillate production on the Bailey's Prairie prospect, Brazoria County, Texas Gulf Coast, with the completion of No. 1 W. B. Munson completed through perforated casing at 11,615-48 ft. In the Coletto Creek field, Victoria County, Texas, drilling was started on No. 1 William Dietzel which is also being drilled for himself.

TRINITY Drillers, Inc., San Antonio, Tex., drilling for Pan American Production Co., in Willacy County, Southwest Texas, has cemented 7-in. casing in No. 1 Garcia at 8,834 ft., and the hole is scheduled to be drilled deeper.

DELTA Drilling Co., Tyler, Tex., has completed contracts with T. P. Cannon, independent operator of Henderson, Tex., for the drilling of a wildcat test to 8,500 ft. in Rusk County, eastern Texas. It will be known as the Delta No. 1 Kangerga Brothers, center of a 115-acre tract in the R. Lane Survey, north of the town of Henderson. The 8,500-ft. contract depth is expected to offer a test of the Paluxy, Glen Rose, and Travis Peak sections.

NOBLE Drilling Co., Houston, Tex., is moving a rotary to the Dyersdale field, Harris County, northeast of Houston, for J. M. English 1 Minor Stewart, northwest of the discovery well.

CHRISTIAN-CARPENTER Drilling. Co., Houston, Tex., extended

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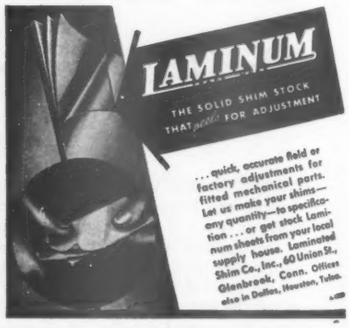
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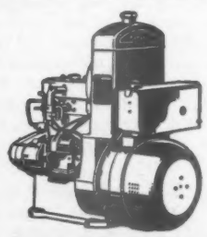

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distillate production in the Ogburn field, Harris County, Gulf Coast Texas, with the completion of No. 1 Baskins, completed in sand at 6,924-36 ft. The well was drilled jointly with Joyce Richardson.

A. S. WADDELL, Albuquerque, N. M., contractor, is drilling the Ambrosia Investors Co. wildcat in C SW SE Section 11-14n-10w, McKinley County, New Mexico. It is a turnkey job. The contractor expects to complete the well within 60 days.

LOFFLAND BROTHERS, contractors of Tulsa and Clay City, Ill., are drilling a wildcat in Jasper County, Illinois, at Continental Oil Co.'s No. 1 Toland, Section 34-7n-8e. Rotary tools are being used.

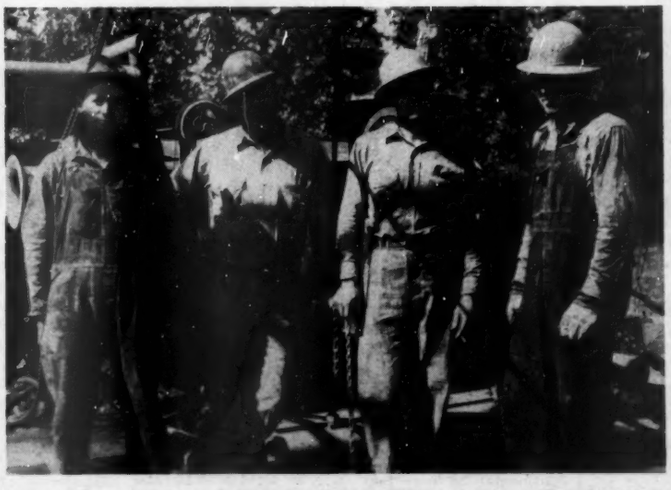
NOBLE Drilling Co., Tulsa, apparently have drilled a pool opener in Gallatin County, Illinois, at Carter Oil Co.'s No. 1 York, SE SE SW Section 33-7s-8e, northeast of Omaha, Ill. Oil was found in a Pennsylvanian sand section at 1,330-40 ft. and Palestine sand at 1,700-12 ft. The crew was drilling ahead to explore deeper levels.

BIG CHIEF Drilling Co., Oklahoma City, Okla., has contract for three wells in the Lovell pool, Oklahoma, where a new play has started on the southeast flank. One is a joint operation of Big Chief and Kenneth Ellison in C SW SE Section 27-18-4w; the others are H-P Gas Co.'s No. 2 Matherson, C SE SW Section 34-18-4w, and Danciger Refineries, Inc.'s No. 1 Shore, C SW SE Section 34-18-4w.

PHINNEY BROTHERS, at a semi-wildcat drilled for Clapsaddle & Harris in Van Buren County, Michigan, set up the first potentially important new producer for the district. The wildcat, located in SW NE NE Section 15-1s-14w, Bloomingdale Township, and between the Bloomingdale and Mill Lake fields, on test flowed 600 bbl. daily after acid. The well was the company's No. 1 Peavey. The company has started on a three-well drilling program, two of which are to be drilled with company tools and Phinney Brothers are erecting machine for the No. 2 Peavey.

JOHNSON-KEMNITZ Drilling Co., Oklahoma City, Okla., has started work at W. H. Atkinson's No. 1 Jelks, NE NE SE Section 22-5n-7w, Grady County, Oklahoma, in an old gas field that was opened nearly 20 years ago. It is contracted to 4,000 ft. and will be the deepest test ever drilled in the township.

TWIN Drilling Co., Grandville, Mich., last week completed the largest producer to date in the Adams field of Arenac County, Michigan, the well being drilled for Pure Oil Co. This well, the company's No. 1 Yenior, in NE SE NW Section 22-19n-3e, flowed an estimated 900 bbl. in 7 hours. Top of the Dundee was placed at 2,875 ft. with hole bottomed at 2,967 ft. in the Dundee.



Crew of the J. I. Roberts Drilling Co., Shreveport, La., on Arkansas Fuel Oil Co.'s west outpost to the Olla field, La Salle Parish, Louisiana, left to right: S. O. Reeves, W. B. Gidden, driller, Gordon Grigsby and Ed McFarland. The test, Tremont Lumber Co.'s No. 9-C is expected to extend Olla 1½ miles to the west

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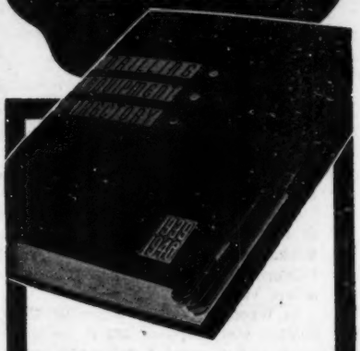

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Good Sundance Sand Well in Moffat Dome, Colorado

By

T. R. INGRAM

DENVER, Colo, Oct. 21.—The Rocky Mountain area had 20 completions, of which 8 were oil wells, 8 dry holes and 4 were gas wells.

In Colorado the Texas Co. had a 200-bbl. pumper in the Sundance sand on the Moffat dome in its 2 Wick, an old well deepened from the Dakota. Texas-California 4 Unit at Wilson Creek is shut down for orders at 6,674 ft.

In Wyoming Sinclair-Wyoming 75-A, in Little Lost Soldier, was deepened 233 ft. to test the lower Tensleep and responded for 2,157 bbl. first 24 hours. The Osage district had four completions, of which three were dry and the other a small well. The Fontenelle Development Co. test in the Fontennelle district in Lincoln County was abandoned at 1,575 ft. and Superior 1-B, an old well in La Barge, originally completed for 2 bbl., was deepened 42 ft. and recompleted for 32 bbl. Lance Creek had no completions.

In Montana, Ohio 9 Sours, Dry Creek, plugged back to the Frontier and was completed as a small gas well. Cut Bank had four completions, the best being R. C. Jeffries 2 Clarke for 200 bbl., and one dry hole in A. R. Pardue 1 Tribal-181. A. B. Cobb 1 Teterud, in North Cut Bank, was abandoned. Two gas wells were completed in the Bowdoin field in Montana-Dakota Utilities 610 and 611. Kevin-Sunburst had two completions, a dry hole and a gas well.

New operations include one for Sinclair-Wyoming in the Wertz field in Wyoming, one wildcat in Lincoln County, one for Ohio Oil Co. in Lance Creek, one in Osage, one for Montana Gas Corp. in the Bowes field, one for Montana-Dakota Utilities in Fallon County, five in Cut Bank, one for Western Natural Gas Co. in Liberty County, seven in the Bowdoin field for Montana-Dakota Utilities, and one in Kevin-Sunburst.

COLORADO

Archuleta County

California-Colorado Oil 2 Macht NE SW NW 32-36n-1w
Drilling in dry hole at 400 ft. in gray shale, set 12½-in. at 300 ft.

Fremont County

U-Tex Oil 1 Hassler.....NE 28-20s-69w
Drilling at 790 ft.

Huerfano County

R. L. Jewett 1 Valdez.....SE NE 30-28s-67w
Drilling 187 ft.

La Plata County

Nick Spatter 1-X Bryce.....SW SW 31-33n-9w
Drilling in hard dark shale at 4,250 ft., show of gas at 4,225 ft.

Logan County

West Plains 1 Sheldon.....SE NW SW 3-10n-55w
Drilling inside 8-in. casing at 2,600 ft. in hard lime formation and feeling for Hygiene sand.

Moffat County

Texas 2 Wick, Lot 9 (approximately NW SW NW) 10-4n-91w, Moffat field, recently deepened from the Dakota sand at 3,935 ft., total depth, to the Sundance sand at 4,555 ft., total depth, is unofficially reported to have made 200 bbl. a day on the pump. It was originally completed in sand at 3,902-35 ft. in 1926 and swabbed 400 bbl. initially. This is the first drilling operation in the field reported since 1936 when 7 Knowlton, in Lot 8, Section 10, pumped 254 bbl. of fluid from Sundance sand at 4,503-57 ft. in 16 hours, of which 85 bbl. were oil. Prior to that time a few wells had been completed in the Sundance.

Steamboat Springs Synd. 1 Sutton NE NE SW 1-5n-96w
Drilling 2,330 ft. in sand.
Mountain Fuel Supply 6-B Wilson NE SE 14-12n-100w
Coring at 3,705 ft., sand at 2,512-36 ft. gaged 1,470,000 cu. ft. through Halliburton tester and 1,090,000 cu. ft. in sand at 3,475-3,512 ft.
Texas 6 Knowlton.....SE cor. Lot 8, 10-4n-91w
T.D. 4,582 ft. in Sundance, 257 ft. of 4¼-in. liner cemented at 4,570 ft., swabbing.

Park County

South Park Oil 1 Lamar.....NE NE SE 34-11s-75w
Drilling 7,487 ft.

Rio Blanco County

Texas Co.-California Co. 4 Unit, NW NW NW 2-2n-94w, Wilson Creek field, a mile south of the discovery well, is shut down for orders at 6,674 ft.

Texas Co. has let contract to Williams Brothers Construction Co. for a 20-mile 4-in. welded line from Wilson Creek to a connection with its line from the Iles and Moffat fields to its refinery at Craig. Right-of-way was acquired more than a year ago. Since the discovery well was completed the oil has been transported from the field in trucks.

Texas-California 5 Unit.....NW NE NE 34-3n-94w
Location.
Raven O. & R. 31 Government SW NW NE 31-2n-102w
Drilling 710 ft., 8¼-in. set at 34 ft.
Buford Oil 1 Government.....SW SW 16-1n-91w
Drilling at 4,244 ft. in lime.
Texas-California 4 Unit.....NW NW NW 2-2n-94w
S.D. 6,674 ft. for orders.

WYOMING

Albany County

Metzger & Deter 1 Nelson, SE SE SE 12-14n-75w, Hutton Lake district, was abandoned at 1,086 ft., total depth, in the top of the Sundance sand. The Muddy sand was at 775-818 ft., the Dakota at 845-87 ft., and top of the Lakota was at 904 ft. All contained water.

Big Horn County

Prescott & Mileski 1 Government.....
NE NW SW 1-51n-93w
Drilling at 1,427 ft. in Thermopolis shale, 7-in. cave string set at 1,356 ft.

Carbon County

Sinclair-Wyoming Oil Co. went back into 3-F Mahoney, C SE NW 34-26n-88w, Mahoney dome, and deepened it from 4,486 ft. to 4,505 ft. in the Tensleep. The well was shot with 500 qt. at 4,363-4,505 ft. and is cleaning out at 4,325 ft. While cleaning out it is making around 295 bbl. a day. It was originally completed in 1938 in the Tensleep at 4,295-4,448 ft. for 172 bbl. a day naturally. Several wells have since been drilled to the Tensleep.

Sinclair-Wyoming 15-A Wertz, a location in the Wertz field, is a south offset to 14 Unit, completed last July in the Tensleep at 6,043 ft., total depth, for 4,824 bbl. initially and marked an extension of the pool to the east.

Sinclair-Wyoming 15-A Wertz..SW SW NE 7-26n-89w
Moming in rotary, first report.

Crook County

Vickers-Continental 1 Duncan-Lobban.....
NE NW SW 28-57n-64w
Drilling 1,856 ft., top Minnelusa 1,482 ft.

Hot Springs County

A. L. & Fred Freudenthal No. 1 SE NE NW 31-43n-92w
Drilling 300 ft. in Thermopolis shale, 10-in. cemented at 97 ft., Blue Springs district, first report.

Lincoln County

Fontenelle Development Co. 1 Frank Pomroy, NE SW 5-24n-113w, Fontenelle district, was plugged and abandoned at 1,575 ft., total depth. Formation is not identified. Company will move rig to the west and drill another well in Section 6.

Superior-Wyoming 1-B, W½ Lot 3, 3-26n-113w, La Barge district, which was completed in January 1929 for 2 bbl. a day at 770 ft., was deepened to 812 ft. and recompleted for 30 bbl. a day in the second sand.

Fontenelle Dev. Co. 2 Government.....
Tract 38, 6-24n-113w
Location, first report.
H. C. Harris 1 Government..SE NW NW 23-21n-117w
S.D. 3,267 ft. for drilling line.

Natrona County

General Petroleum 5-16-S....NW NW SW 16-35n-77w
T.D. 4,623 ft., rigging up for pump test.
General Petroleum 57-16-S....NW SW SE 16-35n-77w
Building rig, first report.
Lewis Gebhart 1 Government..NW NE SE 10-39n-78w
Resumed at 1,907 ft. and drilling at 1,948 ft.

Niobrara County

One new operation in Lance Creek was started with no completions.

Ohio 18 Lamb-Acct. 2.....SE SW NE 5-35n-65w
Location, first report.
Continental 9-B Schuricht...NW SW SE 6-35n-65w
Drilling 5,277 ft., old well drilling deeper from 5,202 ft.
Argo 9 Ford.....SE SW NE 33-36n-65w
Drilling at 4,973 ft. in anhydrite.
Continental 20 Tom Bell....NW SE SE 33-36n-65w
T.D. 5,350 ft., top Leo 5,320 ft., cored saturated sand 5,328-50 ft., cemented 7-in. at 5,328 ft.
Ohio 9 State.....NW SW NW 36-36n-65w
Coring 4,430 ft., top basal Sundance 4,420 ft.

Park County

Continental 4 Northern Pacific-1 SE NE SE 23-58n-98w
T.D. 3,150 ft., swabbing, cored saturated Tensleep 3,082-3,121 and 3,127-50 ft.
Resolute 2 State.....SW SW 16-57n-101w
Swabbing 7 bbl. a day after perforating 7-in. opposite Dakota at 9,730-55 ft.

Platte County

Dividend Oil & Ref. 1 Johnson CSL NW SW 17-24n-66w
Drilling at 3,864 ft., carrying 5⅛-in. at 3,847 ft.

Sublette County

North La Barge Oil 1 Govt..NE SE NE 28-27n-113w
T.D. 1,050 ft., testing.
L. W. Davis 1.....SE SE NE 33-27n-113w
T.D. 1,356 ft., saturated sand 1,313-55 ft., testing.
North La Barge 1 State.....SW SW SE 16-27n-113w
Rigging up.
Texas 2-G Government.....NE NW NW 27-27n-113w
T.D. 1,070 ft., swabbing and testing.

Sweetwater County

Sinclair-Wyoming 75-A, NW SW NW 11-26n-90w, Little Lost Soldier field, the discovery well in the Tensleep in 1930 for 2,500 bbl. initially at 4,009 ft., total depth, was deepened to 4,244 ft. to test the lower Tensleep and has been recompleted for 2,157 bbl. on gas lift. Top of Tensleep was at 3,942 ft. Upper Tensleep oil is around 35 gravity.

Sinclair-Wyoming 94-A.....NW NW NE 10-29n-90w
T.D. 1,900 ft., cemented back to 1,780 ft. and S.D.
Farson Oil & Gas 1 Government—SE NE 18-25n-108w
S.D. 1,382 ft., corrected depth.
Union Gas 1 Hummer.....NW NW NE 6-17n-103w
T.D. 2,110 ft., rigging up rotary.
Gus Pongratz et al 1 Clark.....NW NE 22-19n-104w
S.D. 5,005 ft., temporarily.
Red Desert Corp. 1 Aspden..NW SW NW 34-18n-103w
Drilling 4,645 ft. in sand.
Vermilion Oil 2 Government..SW SW SW 7-12n-99w
T.D. 3,535 ft., reaming to lower 8⅝-in. to bottom.

Weston County

Osage had four completions in the shallow-sand area on the east side.

Triangle Oil 1 Draper, SE SE SW 24-46n-63w, was dry at 150 ft.

Butcher Brothers 6, CNL SW NE 16-46n-63w, is pumping 1½ bbl. a day from sand at 210-17 ft.

Gerald Bock 7, NW NW NW 31-47n-63w, was dry at 300 ft.

Charles Stough 12, CWL SW NW 4-46n-63w, was dry at 318 ft.

Carl Kundy 5.....NE SW SW 29-46n-63w
Rigging up, first report.
Gose Oil Syndicate 1.....NE NE NE 28-47n-63w
Drilling below 5,100 ft., Soda Creek district.
W. H. Connor 1 State.....NW SW NE 36-42n-61w
Drilling 300 ft., test to Sundance.
Joseph Dornacher 1 Kenney & Collins.....
NW NE 33-45n-61w
Cleaning out to test show of oil in Muddy sand at 530 ft., Newcastle district.
John Brorphy 1 Hansen....NW NE NW 13-44n-63w
Running cave string to 1,400 ft.

MONTANA

Big Horn County

Massey Oil & Gas 1 Government..SE SW SE 11-2s-31e
T.D. 1,900 ft. in Dakota sand, rigging up cable tools, slight show water in sand at 1,895-1,900 ft.
Dr. Crosby 1 Pat. Land.....SE SE NE 16-1s-13e
T.D. 1,000 ft., cleaning out caves at 985 ft.

Blaine County

Montana Gas Corp. 1 Sias.....SE SE SW 4-31n-19e
Landed 10-in. at 40 ft. and shut down, first report, Bowes gas field.
Cherry Ridge Synd. 1 Harbolt..NW NW SW 1-35n-20e
Drilling 1,205 ft., show of gas followed by water at 870 ft.

Carbon County

Ohio 9 Souders, C NE SW 2-7s-21e, on north flank of the Dry Creek field, was completed for 900,000 cu. ft. of gas a day in the Frontier at 3,760-4,418 ft. This well was drilled to 5,509 ft. in the winter of 1933 and flowed 300 bbl. a day under back pressure from the Lakota sand and was estimated at 1,000 bbl. if allowed to flow open. It was later plugged back to 5,498 ft. to shut off water. About a year ago it was drilled deeper to 5,511 ft., but showed water. After prolonged pumping in an effort to exhaust the water, it was plugged back and completed as a gas well.

Continental 1 Prigge.....SE SE SE 33-9s-25e
T.D. 3,562 ft., testing.

Cascade County

Bushford Pet. Synd. 1 Shannon-Roberts.....
C SW NE 12-20n-1e
T.D. 3,074 ft., cleaning out to resume, S.D. since June 1939.

Daniels County

Copan Oil & Gas 2 Wiley.....NW NW NW 10-36n-50e
Moving in rotary to resume at 1,928 ft., formerly White Tail Oil & Gas Co.

Fallon County

Montana-Dakota Utilities 145....NE SE NE 10-9n-58e
Drilling 280 ft. in Pierre, 8⅝-in. at 102 ft., first report.
Montana-Dakota Utilities 144 Govt.....SW NE NW 25-8n-59e
T.D. 1,677 ft. in Eagle sand. testing.

Garfield County

H. H. Schwartz, Jr., 1 Charles.....SE NW 21-15n-30e
Coring 3,500 ft.

Glacier County

Cut Bank had four completions and five new operations.

R. C. Jeffries 2 Clarke, C NW SW 34-35n-6w, was completed at 3,015 ft., total depth, and swabbed 200 bbl. first 24 hours from the Cut Bank sand at 2,960-3,005 ft. The main pay was at 2,980-3,005 ft. It is a south offset to his 1 Clark, which made 145 bbl. initially.

Texas 10 Tribal-122, CEL NW SE 6-32n-5w, in the south pool, swabbed 75 bbl. first 24 hours at 2,930 ft., total depth. The Cut Bank sand was at 2,878-2,922 ft., with the main pay at 2,907-22 ft. The Moulton sand at 2,750-2,805 ft. was dry. The Sunburst at 2,810-24 ft. was dry but had a good show of oil at 2,860-33 ft.

Texas 4 Schlag, NE SW SE 26-35n-6w, swabbed 24 bbl. first 24 hours at 2,823 ft., total depth, from the Cut Bank sand at 2,742-98 ft. The main pay was at 2,792-98 ft. It will be shot.

A. R. Pardue 1 Tribal-181, SW SE NE 19-32n-5w, in the south pool, had only a show of oil in the Cut Bank sand at 2,695-40 ft., which failed to increase following a shot, and was plugged and abandoned.

A. B. Cobb 1 Teterud, NE NE NE 24-37n-5w, North Cut Bank, which has been standing at 2,704 ft. for more than a month, was plugged and abandoned. It swabbed 5 to 8 bbl. a day from what probably was the Cut Bank sand at 2,695-2,704 ft., but failed to improve. It is located ½ mile east of the Chandler & Newell 1 Hinstrager, which was completed in May 1939 for 43,000,000 cu. ft. of gas a day, and a mile northwest of Cobb 1 Vargo, which was completed a year ago for 6,500,000 cu. ft. in the Sunburst after plugging back from the Cut Bank sand.

Texas 11 Tribal-615.....CWL NE NE 6-32n-5w
Location, first report.
Nyhagen-Sandgren 4 Anderson..NW NE SW 26-35n-6w
Spudding at 240 ft., first report.
Wm. Hanlon 5 Allotted-128....NW SE NE 12-32n-6w
Rig, first report.
A. R. Pardue 5 Tribal-171.....SW SE SW 7-32n-5w
Location, first report.
Glacier Prod. 6 Miller.....NE NE 30-35n-5w
Rig, first report.
A. B. Cobb 1 Tribal-187.....SE NW 19-32n-5w
Drilling 764 ft., top Colorado 435 ft.
Glacier Prod. Co. 3 Rigney.....SW NE 2-35n-6w
Spudded.
Texas 9 Morrison.....660 ft. S of N¼ cor. 27-35n-6w
Cemented 10-in. at 350 ft.
M. R. Wagner 3 Tribal-173....SW SE SE 12-32n-6w
Drilling 925 ft., top Colorado 631 ft.
Glacier Prod. Co. 4 Neil.....SW NE 20-33n-5w
Cemented 10¾-in. at 635 ft., top Colorado 615 ft.
Texas 5 Tweedy.....SW NW 21-35n-6w
Coring 2,978 ft.
Dakota-Montana 1 Tribal-112..SW NW NE 16-35n-6w
T.D. 2,932 ft., cemented 7-in. at 2,922 ft., 1,800 ft. of water at 2,885-95 ft.
Glacier Prod. 7 State.....NW NW SW 16-33n-5w
Running 7-in. at 2,905 ft.
R. C. Tarrant 3 Hope.....NE 18-34n-5w
Spudded.

Liberty County

Western Natural 3 Townsend....C NW SW 22-37n-4e
Drilling 777 ft. in Colorado shale, first report, Whitlash field.
Rehab-Drout-Tieltges 1 Tieltges..SE SE SW 21-31n-5e
S.D. 735 ft. in Colorado shale.

Phillips County

Montana-Dakota Utilities Co. had two completions in the Bowdoin gas field, where it is carrying on an extensive drilling campaign. Locations were released for seven new operations, one well is drilling and eight have been drilled to around 100 ft. and shut down to await routine drilling after setting pipe through the gravel.

Its No. 609, C SW SW 35-33n-32e, was completed at 1,056 ft. for 962,000 cu. ft. with a rock pressure of 296 lb. Bowdoin sand was at 780-852 ft. and Phillips sand at 945-1,056 ft.

No. 610, C Lot 4, 6-32n-33e, was completed at 1,026 ft. for 950,000 cu. ft. with a pressure of 295 lb. in the Bowdoin sand at 739-822 ft. and the Phillips sand at 881-1,026 ft. The 5½-in. was cemented at 760 ft. and 293 ft. of 4½-in. liner on bottom and perforated.

No. 611, C Lot 7, 6-32n-33e, cemented the 5½-in. at 757 ft. and is drilling in Colorado shale at 911 ft.

Montana-Dakota 618.....SW SW 3-32n-33e
Cemented 8⅝-in. at 103 ft. and S.D., first report.
Montana-Dakota 620.....SW SW 1-32n-33e
Cemented 8⅝-in. at 104 ft. and S.D., first report.
Montana-Dakota 622.....SE NW 22-32n-33e
Cemented 8⅝-in. at 104 ft. and S.D., first report.
Montana-Dakota 623.....NW NE 34-32n-33e
Cemented 8⅝-in. at 104 ft. and S.D.
Montana-Dakota 625.....SW SE 35-32n-33e
Cemented 8⅝-in. at 108 ft. and S.D., first report.
Montana-Dakota 626 Blue.....NW SE 31-32n-34e
Cemented 8⅝-in. at 104 ft. and S.D., first report.
Montana-Dakota 627.....SW SW 17-31n-34e
Cemented 8⅝-in. at 107 ft. and S.D., first report.

Stillwater County

Texas 1 Unit.....SE NW 10-4s-19e
Drilling 6,658 ft.

Toole County

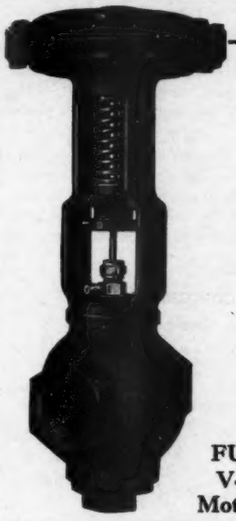
Kevin-Sunburst had two completions and one new operation.

H. F. Patterson 1 Government, NE SE SE 15-35n-3w, was plugged and abandoned at 1,904 ft., total depth. The contact at 1,810-15 ft. was dry and there was a show of oil in a break in the lime at 1,825-30 ft. It was acidized with 500 gal. without results.

Consolidated Gas Corp. 2 Haukland, SE cor. 28-33n-2w, was completed at 1,530 ft., total depth, for 1,200,000 cu. ft. of gas a day from the Sunburst at 1,475-1,515 ft.

Fulton-Commonwealth 5 Thompson, NE SW NE 28-35n-3w, reported a completion 2 weeks ago, was acidized and is pumping 100 bbl. a day. It was dry in the contact at 1,692 ft. and had 150 ft. of oil in a break in the lime.

Pacific National Oils 10 Govt.....SW SE SE 8-35n-2w
Drilling 420 ft., first report.
Big West Oil 4 Ellingson....CWL SW NW 14-35n-3w
Drilling 100 ft.
Aroon A. Welch 2 Lerum.....SE SW NW 25-36n-2w
Spudded to 10 ft. and S.D. to complete rigging.
Casper Oien 11 Engemoen....NW NE SW 11-35n-2w
Drilling 620 ft.
A. B. Finland et al 1 Dewald SW NW SE 23-26n-2w
Drilling 1,665 ft., top Sunburst 1,660 ft.
Coolidge & Coolidge 2 State....SE SW SE 26-36n-2w
S.D. 30 ft.
Texas 9 Swears.....SE SW SW 9-35n-2w
Cemented 7-in. at 1,558 ft.
Prevol & Shay 1 Government.....SW NW 15-35n-3w
T.D. 1,840 ft., P.B. to 1,817 ft. to shut off water and test.
Montana Gas 1-X Nelson.....SE NE 12-35n-1e
Drilling 1,930 ft.



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MICHIGAN OPERATIONS

Adams and Bloomingdale Pools Get Best Wells of Week

By OTTO C. PRESSPRICH

SAGINAW, Mich., Oct. 21.—A Pure Oil Co. completion in the new Adams Township field in Arenac County that flowed 900 bbl. in 7 hours from a depth of 2,967½ ft. and a Bloomingdale Township well in Van Buren County's dwindling production district that was flowing 768 bbl. a day, after acid treatment, were the week's outstanding developments in Michigan.

Another list of wildcat tests in widely scattered parts of the state was added to the total of dry holes and in the booming Overisel section of Allegan County, where dozens of new tests are being started, three producer completions and one dry hole were recorded.

Fourteen counties were locations for new tests, according to the state Conservation Department's list of 22 drilling permits for oil and gas issued during the past week. The list, bringing the total for the year to 898, included five permits for Allegan County locations, two each for Gladwin, Huron, Osceola and Van Buren, one each for Isabella, Manistee, Shiawassee, Cass, Ottawa, Kent, Muskegon, Montcalm and Clare.

Sun Oil Co. had reached formation top and set 5-in. casing preliminary to testing at the week end its 1 Saginaw National Bank in Section 21 of Hamilton, Clare County, in another attempt to confirm the one-well pool opened several weeks ago by the Sun 1 McKenna, a half mile west. Sun 1 Sersaw, southwest diagonal offset, was completed dry last week.

In Isabella's Wise field American Drilling Co. got a 315-bbl. well. Farther north a Roscommon test failed, but in Osceola County Taggart Brothers continued to develop its new gas field, completing a Marion Township test good for 16,650,000 cu. ft. a day. Taggart also completed a wildcat gas well in Clare's Winterfield that rated better than 4,000,000 cu. ft., extending that area.

Sun Oil prepared to test the Trenton with its 1 Kidder wildcat deep test in Rutland of Barry County. A Mecosta County wildcat oil test in Deerfield Township was down 2,500 ft. and there were three active wildcat projects in Montcalm County, most advanced being Columbia Oil & Gas Co. 1 Willett, nearing Dundee below 3,000 ft.

All told last week in Michigan there were eight producing oil wells completed for initial total potential of about 4,500 bbl. a day, two natural-gas wells and 12 dry holes, most of which were wildcat tests. In addition operations were temporarily suspended on two other locations.

MICHIGAN COMPLETIONS

Allegan County

Casco Township: Alfred R. Urion 1 Tripp, SE NW SE 34-1n-16w, wildcat, dry after hole filled with water, T.D. 1,223 ft.

Otsego Township: W. Spencer Cook 1 Zagel, NW NW NW 3-1n-12w, dry after 500 ft. of water in hole, T.D. 1,523 ft.

Overisel Township: Regal Dutch Petroleum Co. 1 Lubbers, SW NE NE 16-4n-14w, dry, T.D. 1,584 ft.

H. C. Nelson 4 Peters, NE NW SW Sec. 9, acidized, pumping 100 bbl., T.D. 1,476 ft.

W. L. McClanahan 4 Hoffman, SE SE SE Sec. 16, acidized, pumping 250 bbl., T.D. 1,506 ft.

Regal Dutch Petroleum Co. 1 Kroeze, NE NW NW Sec. 16, acidized, 200 bbl., T.D. 1,519 ft.

Arenac County

Adams Township: Pure Oil Co. 1 Yenior, NE SE NW 22-19n-3e, 900 bbl. first 7 hr., T.D. 2,967½ ft.

Barry County

Johnstown Township: Wolverine Natural Gas Corp. 1 Neynolds, C S½ SE NW 25-1n-8w, wildcat, dry, T.D. 1,855 ft.

Cass County

Ontwa Township: R. B. Tamblyn Development Co. 1 Woolverton, SE NE NE 22-8s-15w, wildcat, pumping 3 bbl. and water.

Clare County

Hamilton Township: Sun Oil Co. 1 Sersaw, C N½ NE NW 22-19n-3w, wildcat, dry, T.D. 3,850 ft.

Winterfield Township: Taggart Brothers Co. 45 Egts-Swindlehurst, C NW 32-20n-6w, wildcat, 4,290,000 cu. ft. natural gas, T.D. 1,366 ft.

Isabella County

Wise Township: American Drilling Co. 1 Drake, SE NE SE 20-16n-3w, 2,000 gal. acid, 315 bbl., T.D. 3,714 ft.

Kent County

Vergennes Township: Mesel & Spielberg 1 Anderson, NE SW NW 22-7n-9w, wildcat, dry, T.D. 2,430 ft.

H. C. Williams 1 Hermance & Gross, SE SW SE Sec. 30, wildcat, hole filled with water, dry, T.D. 2,690 ft.

Wyoming Township: Conrad S. Johnson 1 Blaas et al comm., temporarily abandoned at 90 ft.

Monroe County

Dundee Township: Jetter Drilling Co. 1 Hagan, SE SE SE 29-6s-6e, wildcat, small show of oil, list dry, T.D. 2,188 ft.

Frenchtown Township: D. & S. Petroleum Co. 1 St. Charles, SW SW SW 12-6s-8e, wildcat, show of oil, listed dry, T.D. 2,179 ft.

Osceola County

Marion Township: Taggart Brothers Co. 47 Fuller-Barhitte-Rogers, C NE 36-20n-7w, 16,650,000 cu. ft. natural gas, T.D. 1,350½ ft.

Ottawa County

Holland Township: Smith Petroleum Co. 1 Bosman, NE NW NW 4-5n-15w, wildcat, dry, T.D. 1,631 ft.

Tallmadge Township: Smith Petroleum Co. 5 Fenske, SW NE NW 34-7n-13w, 100 bbl., 1,500 gal. acid, T.D. 1,854 ft.

Zeeland Township: Lenoran Petroleum Co. 1 Geerlings, NW NW NW 31-5n-14w, wildcat, dry, T.D. 1,503 ft.

Roscommon County

Lyon Township: Edwin C. Meredith 1 Neer, NE NE NW 19-24n-4w, wildcat, dry, T.D. 3,156 ft.

Van Buren County

Bangor Township: Hudson & Potts 2 Ulrath, NE SE SW 21-2s-16w, show oil and water, dry, T.D. 1,006 ft.

Bloomingdale Township: Clapsaddle & Harris 1 Peavy, SW NE NE 15-1s-14w, flowing 768 bbl. after acid, T.D. 1,262½ ft.

Covert Township: R. B. Tamblyn Development Co. 1 Vaughn, SW SW NE 27-2n-17w, location temporarily abandoned.

MICHIGAN DAILY CRUDE-OIL RUNS

Daily Average for September 1940

Pool—	Wells	Runs
Porter-Yost	339	4,874
Greendale-Chippewa	178	1,258
Geneva-Midland	2	0
Sherman-Isabella	61	1,130
Vernon-Leaton-Denver	76	643
Wise-Isabella	53	2,179
Freeman-Redding	144	11,592
Hamilton-Clare	1	26
Winterfield-Clare	1	5
Grant-Clare	3	2
Beaverton	20	653
Edenville	26	287
Grout-Gladwin	2	32
Bentley-Gladwin	35	355
Buckeye-Wicklund-Oard	293	2,377
Ogemaw	231	1,280
Secord-Gladwin	2	0
Adams-Arenac	19	1,299
Clayton-Arenac	51	1,089
Tuscola	4	0
Saginaw-Bay Area	56	105
Birch Run	25	28
Dundee-Monroe	12	313
Montcalm County	34	280
Allegan-All Pools	483	6,579
Holland-Zeeland	3	14
Muskegon	58	84
Walker-Wyoming-Tallmadge	438	8,323
Van Buren-All Pools	282	2,963
Barry County	1	11
Total	2,933	47,781

Oklahoma Fields

(Continued from Page 57)

Continent Torpedo with 15 qt. at 1,498-1,506 ft., pumped 15 bbl.

Sand Springs area: Brockman 4 Phillips, SE NE SW 15-19-11, T.D. 2,095 ft., pumped 5 bbl.

Wagoner County

McCracken area: French Brothers 2-A Williams-Mobbs, NE NW SE 20-18-17, T.D. 455 ft., dry.

South Wagoner area: Hill Associated Oil 1-A fee, NW NE NE 30-17-18, T.D. 1,086 ft., dry.

WILDCAT REPORTS

Caddo County

Texas 1 Smith . . . . . C NE NW 2-5-12w
Old T.D. 2,556 ft., dense 3,713 ft., drilling 3,889 ft.

Creek County

Shell 1 Lynihan . . . . . NE SE NE 21-15-7
T.D. 4,119 ft., flowed 60 bbl. per day, 40 gravity.

Irvin Drlg. 1 Bailey . . . . . SE NE SE 1-18-9
Drilling 1,375 ft.

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Hughes County

Don Feagin 1 Fulks ..... NE NW SW 8-9-11
T.D. 1,904 ft., S.D. repairs.
Magnolia 1 McKay ..... SW SW SE 16-5-11
Drilling below 400 ft.

Jackson County

G. R. Burke 1 Estes ..... SW SW NE 34-3-19w
Drilling 750 ft.

Kiowa County

Artie Baker 1 Coakley ..... NW NE SE 30-7-17w
Drilling 190 ft.
Dempsey & Son 1 Dempsey ... SW NW NE 31-4-18w
Drilling 140 ft.

Lincoln County

Mason & Stuart 1 Crane ..... SW NE SE 7-12-5
Verdigris 4,067 ft., lower Skinner 4,220 ft., R.U.S.T. 4,219 ft.
Berkey & Mohican 1 Hoffman ..... SE cor. 18-12-6
Checkerboard 2,340 ft., drilling 3,228 ft., no Oswego.
Berkey & Mohican 1 Tedford ..... NE NE NW 28-12-6
T.D. 3,405 ft., S.D., may drill to Hunton.
Okla. Oil Corp. 1 Berry ..... SE SE NW 28-16-5
Oswego 3,304 ft., Prue 3,380 ft., T.D. 3,446 ft., waiting orders.

Love County

Colvin & Hicks 2 Westheimer .. C W½ SE SW 27-6s-2
Drilling 2,406 ft.

Okfuskee County

W. O. Carter 1 Bucco ..... NE NE SE 20-10-12
Drilling 780 ft.
W. B. Pine 1 Armstrong ..... SE SE NE 30-11-10
2,400 ft. oil in hole at 3,336 ft., dry sand 3,345-55 ft., T.D. 3,375 ft., S.D.
Vierson & Phillips 1 Leonard .. SW SE NW 11-13-7
T.D. 3,594 ft., shot 2,638-65 ft. and flowed small heads, P.B. to 2,652 ft., filled 180 ft. water and 40 ft. oil in 1 hr.

Osage County

Watchorn Oil 1-A Childs ..... C NE SW 6-22-8
Layton 2,885-95 ft., Oswego 3,400-3,560 ft., Mississippi 3,927 ft., Woodford 4,177 ft., Wilcox 4,215 ft., ran Schlumberger 4,240 ft., T.D., P.B. 4,165 ft., 2,000 ft. fluid in hole.
Peters & Norbla 15 Osage ..... SE NW SW 16-22-9
T.D. 2,661 ft., pumped 15 bbl. per day.

Pottawatomie County

J. F. Smith 1 Mand ..... SE SW SE 27-8-5
Drilling 1,730 ft.

Seminole County

Amerada 1 Campbell ..... C N½ SW SW 30-9-6
Drilling 2,410 ft.
Mid-Continent 1 Porter ..... NW SW NW 12-7-7
T.D. 4,580 ft., rigging up standard tools, drilling plug.

Stephens County

Sun Oil 1 Bouing ..... NE SW NW 9-1s-4w
Sand and show oil 4,754-56 ft., drilling 5,385 ft.
Halliburton Oil Well 1 fee ..... SE SW SW 5-1s-7w
Drilling 370 ft.

Tillman County

Cline et al 1 Staley ..... SE SE NW 10-2s-19w
T.D. 6,750 ft., P.B. 5,515 ft., slight show oil, S.D.
Kadane Bros. 1 Andrews ..... NW cor. 35-2s-19w
T.D. 5,632 ft., tools moved out.

Woods County

Gulf 1 Hess ..... C NE NW 33-23-13w
Drilling 2,715 ft.

Illinois Fields

(Continued from Page 72)

Simmel 1 Shardy ..... NE SW NW 34-1n-4w
Pumped 94 bbl. oil and 6 bbl. water, 60-qt. shot, Trenton 548-90 ft.
Wise 1 Tarlton ..... NW NE NE 33-1n-10w
Pumped 161 bbl. oil and 1,400 bbl. water, 1,000 gal. acid, Trenton 640 ft.
Doback 1 Ostertag ..... E½ NW NE 33-1n-10w
Pumped 147 bbl. oil and 1,350 bbl. water, 1,000 gal. acid, Trenton 692-743 ft.

Schuyler County

O. A. Reed 1 S. F. Henry ..... NW SW SE 22-3n-2w
Dry, Niagaran 692-735 ft., T.D. 738 ft.

Tazewell County

Adams 1 Mullinex ..... SE SE SW 15-22n-5w
Junked, T.D. 440 ft.

Wabash County

Snowden & McSweeney 1 J. Harness, Jr. .....
SW NW NE 34-2n-13w
Dry, Cypress sand 2,385-2,432 ft., McClosky 2,652-54 ft., T.D. 2,688 ft.
F. Hartman 1 Pixley ..... N½ S½ SW 8-1n-12w
Dry, T.D. 1,618 ft.
Sam Yingling 3 Seiler ..... SW SW SW 26-1s-13w
Dry, McClosky 2,631-39 ft.
Tide Water 3 Buchholz ..... SE NW NE 9-2s-13w
Pumped 10-bbl. oil, 10-qt. shot, Cypress sand 2,403-13 ft.
W. W. Gray 3 fee ..... N½ SW SE 14-3s-14w
Flowed 309 bbl. oil, 3,000 gal. acid, McClosky 2,862-67 ft.
W. W. Gray 4 fee ..... SW SW NE 15-3s-14w
Pumped 171 bbl. oil, Biehl 1,807-21 ft.

Washington County

Joe Blalock 1 J. W. Helper .... SW SW SW 19-3s-4w
Dry, Cypress 1,028-38 ft.

Wayne County

Texas 4 S. Clark ..... W½ SW SE 4-2s-7e
Flowed 554 bbl. oil, 3,000 gal. acid, McClosky 3,251-75 ft.
Texas 1 C. Harris ..... NE NW NW 9-2s-7e
Pumped 42 bbl. oil and 22 bbl. water, 1,500 gal. acid, McClosky 3,280-94 ft.

White County

E. E. Goad 1 fee ..... NW SW NW 29-3s-9e
Pumped 125 bbl., 2 per cent water, McClosky 3,482-86 ft.
Cherry & Kidd 1 W. W. Gray-C . NE SW SE 8-4s-14w
Pumped 70 bbl. oil, 110-qt. shot, 2,680-2,710 ft., T.D. 2,723 ft.
Pure 1 G. P. Calvin-B ..... SW SW SW 9-4s-14w
Pumped 191 bbl. oil, Aux Vases 2,819-38 ft., T.D. 2,845 ft. (first Aux Vases completion in area).

Superior 1 B. S. Collins ..... NW SW SW 23-4s-14w
Pumped 493 bbl., 15 per cent water, McClosky, 2,901-05 ft., 2,928-32 ft., 2,962-66 ft., T.D. 2,988 ft., P.B. to 2,675 ft.
Tide Water 1 E. Zitick ..... SW NW SE 23-6s-8e
Pumped 132 bbl. oil, 10-qt. shot, McClosky 3,030 ft., T.D. 3,123 ft., P.B. to 2,793 ft., pay Cypress 2,716-28 ft.
G. Cameron 3 E. Wilson ..... SE SW SE 15-6s-9e
Pumped 83 bbl. oil, 60-qt. shot, Waltersburg 2,224-45 ft.
M. M. Rogan 1 Jennings ..... SE SW NW 23-6s-8e
Dry, Ste. Genevieve 3,086 ft., T.D. 3,206 ft.

Woodford County

Morton O. & G. 1 Moreland ..... NW NW SE 31-26n-1e
Dry, T.D. 3,148 ft.

ILLINOIS DRILLING REPORT

Bond County

G. Brainard 1 Lindley ..... NE NE SW 26-6n-4w
Underreaming 8-in. at 850 ft., T.D.

J. Farrelly 1 Kyle ..... SW NW NW 28-4n-4w
Fishing at 1,417 ft.

Bureau County

John Wall 1 F. J. Baird ..... NW NW NW 9-18n-10e
Set 10-in. 250 ft.

Clark County

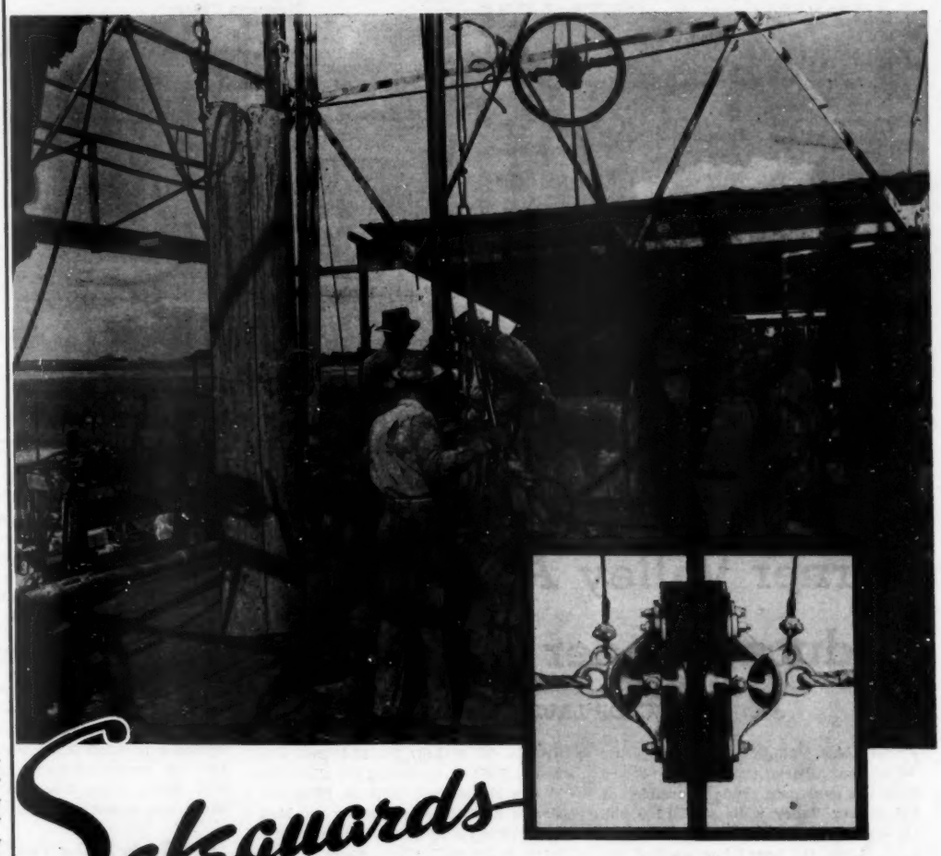
Strickler 1 McFarland ..... NW NE SW 19-10n-13w
T.D. 2,833 ft., P.B. 1,410 ft., cleaning out to shoot.

Coles County

W. P. Miller 1 S. P. Taylor ..... NE SW NE 33-14n-10e
Set 10-in. 504 ft., drilling 600 ft.

Clinton County

Ed Self 1 F. Ries ..... E½ SE NW 34-3n-1w
Drilling 200 ft.
J. Wellinghoff 1 Huelsmann .. NE NE SE 17-1n-3w
Devonian 2,457 ft., T.D. 2,540 ft., show oil 2,518 ft., S.D.
L. S. Miller 1 Schmidt ..... C E½ W½ SE 35-2n-5w
S.D. 2,295 ft.



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Jones Bechtel & Burgess 1 Hester NW SW NE 35-3n-1w Drilling 1,410 ft.

Crawford County

L. A. Plumb 1 Snider ..... W½ NW SW 27-6n-12w S.D. 600 ft.

Edwards County

Illinois Prod. 1 W. W. Spotswood..N½ SW SW 1-2n-10e Moving in, first report.

Effingham County

Turner 1 Pruett ..... SE SW NW 7-5n-3e Drilling 1,565 ft.

Fayette County

John Pummill 1 Isbell ..... NW NE SW 33-8n-1w S.D. 1,165 ft.

Gallatin County

Carter 1 B. M. York ..... SE SE SW 33-7s-8e Tested 7 bbl. an hr., 1,331-69 ft., Menard 1,760 ft., Waltersburg 1,854 ft., Tar Springs 1,895 ft., drilling 1,975 ft.
Exchange 1 O. Evans ..... NE NE NW 20-8s-8e Drilling 1,600 ft., Pennsylvanian sand 1,579-89 ft., show oil.
R. Powers 1 West ..... SW NW SE 28-7s-8e Drilling 745 ft.

Hamilton County

Kingwood 1 Williams ..... S½ SE NE 3-4s-6e Drilling 3,400 ft., Waltersburg 2,658 ft., Cypress 3,050 ft., Aux Vases 2,339 ft., Ste. Genevieve 3,377 ft.
Exchange 1 General Am. Life Ins..NE SE NE 35-5s-6e Drilling 6,360 ft.
Exchange 1 Stelle ..... SW NW SE 27-5s-6e Drilling 1,970 ft., Kincaid 1,843 ft.
Texas 1 G. Edwards ..... NW NE NE 3-6s-6e Drilling 2,480 ft.
Buell & Herndon 1 Markmiller .. NW NE SE 30-6s-7e Location, first report.

Hancock County

F. Henigman 1 M. Roberts .... N½ SE SW 24-4n-5w Drilling 360 ft.

Jackson County

W. R. White 1 Dean ..... NE NW NW 18-9s-3w Drilling 1,292 ft.
Barton & Shipmen 1 P. Maharry..NE NE SE 20-9s-3w Spudding.

Jasper County

Johnson 1 V. V. Hunt ..... E½ SE NE 17-8n-10e Testing 2,607 ft.
Anderson & Voorhees 1 A. Pippen SE NW SW 16-8n-10e Glen Dean 2,055 ft., Renault 2,370 ft., Ste. Genevieve 2,477 ft., setting 5½-in. on top McClosky 2,551 ft., T.D. 2,518 ft.
Continental 1 G. T. Toland ..... NE NE SE 34-7n-8e Drilling 2,100 ft.

Lawrence County

Robinson 1 Sauers ..... NW SE NW 20-3n-12w Elev. 508 ft., drilling 3,016 ft.

McLean County

Funks Grove O. & G. 1 Crawford NW NW NW 28-22n-1e Spud; first report.

Madison County

Alch & Carroll 1 Rinkel ..... SE NE NW 33-5n-6w Drilling 478 ft.

Marion County

Bialock 1 S. Schilling ..... NE NE NW 18-1n-2e Drilling 1,875 ft.
Martin et al 1 Robinson ..... SW SE SW 4-2n-1e Trenton 4,268 ft., testing 4,305 ft.
Big Four 1 Sherman ..... NE NW NW 9-2n-1e Old T.D. 3,004 ft., fishing 3,198 ft.
Shell 6 C. Vewers ..... E½ SE NW 18-3n-1e T.D. 4,100 ft., no show oil, P.B. 1,325 ft.
Creeds 1 Kerwin ..... NW NW SW 28-3n-1e Drilling 865 ft.

Macoupin County

O. L. Smith 1 Klein ..... SE NW NE SE 7-9n-7w S.D. 870 ft.
Bridges & Vallier 1 Feilser ..... NW NE SW 1-9n-7w Spud; first report.

Peoria County

Blue Bell O. & G. 1 Kyle ..... NW SW NW 17-8n-6w T.D. 1,011 ft., P.B. 910 ft., S.D. 1,000 gal. acid, tested water.

St. Clair County

Harris et al 1 City Park ..... NW SE 34-2n-9w S.D. 1,595-1,629 ft.
B. W. Fitzgerald 1 Ittner ..... SE SW SE 9-1n-8w Moving in; first report.

Saline County

H. G. Spiller et al 1 Ada Sisk .... NE NE NE 15-10s-1e Drilling 1,426 ft.

Shelby County

J. Powell 1 Rincker ..... SW SW SE 22-10n-5e Drilling 1,100 ft.

Tazewell County

Bartelmay 1 Mathis ..... SW NW SW 24-25n-3w Drilling 132 ft.

Wabash County

C. Heneipp 1 J. Smith heirs .... SW SW SE 15-1n-12w Cleaning out 2,165 ft.
O'Meara 1 Harris ..... SW NW SE 17-1s-12w (cor.) Menard 1,593 ft., Golconda 2,007-15 ft., Cypress 2,033-46 ft., T.D. 2,077 ft.
Leighty et al 1 W. Trimble ... E½ E½ E½ 35-2n-12w Moving in.

Washington County

Watt 1 Kentenhouse ..... NW NW NW 27-2s-4w Drilling 125 ft.
A. Barton et al 1 Edmiston ..... NE NE SW 5-2s-2w Spudded and S.D.

Wayne County

Eason & Weinert 1 C. Bright .... N½ NW NE 2-2s-7e Drilling 2,220 ft.

White County

W. C. McBride 1 F. Hon ..... SW SE SW 33-3s-14w McClosky 2,896 ft., acidized and testing, 2,905 ft.
Orient 1 L. Morgan ..... N½ SW SE 21-3s-8e Menard 2,505 ft., Waltersburg 2,600 ft., drilling 2,770 ft.
F. H. Rhodes 1 H. D. Golden ... SW SE NE 29-4s-14w Location, first report.

De Kalb County

J. E. Milburn 1 Eraas ..... NE NW SE 22-38n-3e S.D. 520 ft., Trempelear 370 ft., Franconia 384 ft., Galeville 510 ft.

Appalachian Fields

(Continued from Page 69)

kany 5,316 ft.; gas 5,332-43 ft.; T.D. 5,346 ft.; R.P. 1,240 lb. 24 hr.

Kanawha County

Poca district: Columbian Carbon 1 H. C. Jones, 1,494,000 cu. ft. gas; Corniferous lime 4,912 ft.; Oriskany 5,026 ft.; T.D. 5,070 ft.
Godfrey L. Cabot 3 J. L. McLean, 492,000 cu. ft. gas; Oriskany 4,807 ft.; T.D. 4,894 ft.

NEW WORK

Clay County

Pleasant district: Thompson Gas T52 Thompson Land & Coal, elev. 973.9 ft.

Gilmer County

Center district: Burge, Lowther & Shuman 1 Scott Vanhorn, elev. 768 ft.
Carnegie 1 Franklin Maxwell heirs, elev. 1,233 ft.
Glenville district: Pittsburgh & W. Va. 7776 B. S. Messenger, elev. 972 ft.
Troy district: Bruce Haney 1 T. C. Scott, elev. 782 ft.

CANADIAN FIELDS

Turner Valley Allowable Is Reduced Under New Policy

By VICTOR LAURISTON

CHATHAM, Ont., Oct. 19.—A new order of the Alberta Conservation Board fixes the aggregate crude allowable for 118 Turner Valley wells at 790,500 bbl. for October. Under the new chairman, R. E. Allen, the board has adopted the policy of setting maximum monthly allowables for each well instead of daily quotas. The new monthly allowable represents a daily quota for the field of 25,500 bbl., compared with a daily average for September of 26,837 bbl. Future orders will be issued regularly each month, instead of at irregular intervals. In the new schedule, Home Oil 2 is the largest producer with 1,225 bbl. a day, and Home 3 ranks second with 1,050 bbl. Other major producers are Alberta Oil Incomes 1, North Turner Valley, with 700 bbl.; and Anglo-Canadian 7 and Arrow Royalties 1 with 650 bbl. each. Pacific Petroleum 5, LSD 6, 7-19-2w5, is given a first allowable of 18,600 bbl. for the month, or 600 bbl. a day.

Tests in the Lime

North Turner Valley: Alberta Oil Incomes 2, LSD 4, 4-21-3w5, has finished in the black lime at 8,809 ft. and is testing production.

Southwest field: Pacific Petroleums 4, LSD 3, 32-18-2w5, is fishing 304 ft. in the lime at 7,848 ft.

Northwest-Hudson's Bay 4, LSD 14, 8-18-2w5, is below 8,193 ft. after cementing in the lime at 7,949 ft.

West Central field: Royalite Oil 52, LSD 12, 5-19-2w5, finished at 7,609 ft., is acidizing and testing.

Okalta Oil 9, LSD 13, 18-19-2w5, finished at 7,971 ft., is testing for allowable.

Arrow Royalties 2, LSD 15, 13-19-2w5, is below 8,122 ft. after getting the Madison at 7,959 ft. Twin Valley Syndicate 1, LSD 9, is below 7,805 ft., more than 80 ft. in the lime.

New Test to Start

West Canadian field: Anglo Canadian Oil 9, LSD 14, 7-19-2w5, will start work this fall. Location is a half mile north of Pacific Petroleums 5 producer.

Border Fields

In the Twin River area, southern Alberta, Buckley Oils 1, LSD 4, 23-1-20w4, got the lime at 3,823 ft. A drill-stem test showed some gas and oil but in deepening an intrusion of black sulfur water was encountered. The test will probably be abandoned.

On the Blood Reserve, west of Lethbridge, Northwest Co. 1, LSD 3, 20-5-23w4, is rigged ready to spud.

Home Oil Operations

An official statement of Home Oil Co. operations for the 9 months ending September 20 shows a crude output of 415,474 bbl. from its North Turner Valley producers, with gross revenue of $492,326.52. Three other North Turner Valley tests are close to the lime. Home 1 Brazeau, in the northern foothills, abandoned at 8,728 ft. after faulting from the Kootenay to the Blairmore, on a 30-day test failed to show commercial production. A gas flow of 9,000,000 cu. ft. with 2,450 lb. pressure dropped to 3,000,000 cu. ft. with 1,500 lb. A 34-day separator test recovered less than 2 bbl. of oil per day. No new operations will be started this year, but the company is holding 63,493 acres of leases pending further geological study of the area.

Pouce Coupe Test

In the Pouce Coupe area in the northern Alberta foothills, Guardian Oil 1, 7-80-12w6, bottoming in the Devonian limestone at 6,280 ft., is testing production, on recommendation of Chairman R. E. Allan of the Alberta Conservation Board who recently visited the field.

Tests in the Foothills

In the Clearwater area, northern foothills, Clear Oils 1, LSD 8, 2-35-10w5, is in the Banff shales below 540 ft. and getting close to the Devonian limestone where production is expected.

On the Grease Creek structure, Grease Creek-Northwest 1, LSD 2, 13-29-7w5, bottoming at 7,017 ft., is cleaning and running casing, preparatory to deepening.

In the Sheppard Creek area, south of Turner Valley, Alberta Pacific 1, LSD 6, 7-16-2w5, is below 5,612 ft. and getting close to the first porous horizon of the Madison.

In the Willow Creek area, Oil Field Development 1, LSD 7, 7-13-2w5, has spudded, and is below 100 ft. Drilling started in the Cardium sandstone, and the lime is expected around 3,100 ft.

Vermilion Field

In the Vermilion field, East Central Alberta, Western-Battleview 1, LSD 1, 30-50-5w4, finished at 1,835 ft., has 1,100 ft. of oil standing in the hole, and is being put on the pump. Vermilalta-Frankview 2, LSD 4, 29-50-5w4, has 800 ft. of oil in the casing, and is installing pump. Conestoga 1, LSD 2, 30-50-5w4, has cemented production string on top of the sand, and is drilling in. Richardson 1, LSD 14, 20-50-5w4, finished around 1,825 ft. with a good show of crude, and is waiting for pump. Alberta Southern Oil 1, LSD 15, 20-50-5w4, is rigging. Franco-Dalton 1 has location in LSD 12, 25-50-6w4.

Steveville Field

In the Steveville field, east of Calgary, Standard of British Columbia 2 Princess, LSD 3, 13-20-12w4, has spudded, and is below 722 ft. Location is about a mile southeast of No. 1 Princess, which got substantial but noncommercial oil and gas shows. Anglo-Canadian Oil Co. is moving in heavy diesel rotary to deepen its No. 2 from 3,262 ft. This test got a gas flow, estimated at 11,000,000 cu. ft., in the top of the Madison and will be carried down to test the Devonian limestone.

Lloydminster Field

In the Saskatchewan end of the Lloydminster field, Shaw Petroleums 3, LSD 5, 23-49-28w3, bottoming at 1,710 ft., will run casing and test production. It may later be deepened to 2,000 ft. In the Alberta end of the field, Lloyd-Gates 1, LSD 9, 26-49-1w4, is preparing to resume after setting 8-in. casing at 1,100 ft. Shaw Petroleums 2, LSD 10, 25-49-1w4, bottoming at 1,756 ft., is installing pump for definite production test, after bailing considerable crude.

Ontario Completions

Yarmouth Township: Dominion Natural Gas 1 W. H. Mills, Lot 21-4, has been abandoned at 1,500 ft. after failing to get production in either the Guelph-Niagara or the Clinton.

Windham Township: Walters Syndicate 1 finished a gasser with around 400,000 cu. ft. a day.

Malden Township: Walker & Drake 1, east of Malden Center, finished around 900 ft., with 5,000 cu. ft. a day, and has been abandoned.

Dereham Township: Aloka-Aikins 1, north of Tillsonburg, got the Guelph-Niagara around 910 ft. with water and traces of gas, and was abandoned around 930 ft.

Summary of Operations, All Fields, September

SUMMARY OF ALL FIELDS

Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Appalachian	395	432	18	62
Ohio	95	304	33	40
Kentucky	58	2,902	22	5
Michigan	84	9,302	39	8
Illinois	334	59,967	81	1
Indiana	48	4,962	14	6
Kansas	132	36,567	31	5
Oklahoma	126	10,269	43	13
Missouri	4	0	1	3
Nebraska	5	1,137	2	0
North Central Texas	187	53,827	65	3
West Texas	126	104,691	14	0
Texas Panhandle	36	5,702	2	7
East Texas	52	3,891	8	3
East Texas Border	8	55	1	1
Upper Texas Gulf	109	22,664	19	4
Lower Gulf Coast Texas	51	6,145	11	3
South Central Texas	16	135	11	1
South Texas	77	3,993	33	1
Southeast New Mexico	33	6,616	11	0
Arkansas	17	3,690	3	1
North Louisiana	78	5,045	12	10
Gulf Coast Louisiana	69	14,205	22	3
Mississippi	27	4,435	17	0
Alabama	3	0	3	0
Georgia	2	0	2	0
Florida	4	0	4	0
Montana	27	1,500	8	6
Utah	2	0	0	2
Wyoming	20	6,549	5	1
Colorado	1	14	0	0
Northwest New Mexico	2	72	0	1
Total Sept.	2,228	369,071	535	190
Total Aug.	2,525	478,858	620	205
Difference	297	109,787	85	15

Rigs and Wells Drilling

District—	Rigs	Dig.	Ttl.
Appalachian fields	62	462	524
Ohio	47	177	224
Kentucky	5	63	68
Michigan	28	135	163
Illinois	50	224	274
Indiana	28	72	100
Kansas	32	216	248
Oklahoma	43	233	276
Missouri	0	8	8
Nebraska	9	23	32
Iowa	0	3	3
South Dakota	0	1	1
Arizona	0	7	7
North Central Texas	108	250	358
West Texas	27	202	229
Texas Panhandle	29	66	95
Eastern Texas	15	53	68
East Texas Border	2	18	20
Gulf Coast Texas	17	105	122
Lower Gulf Coast Texas	10	59	69
South Central Texas	4	59	63
South Texas	18	43	61
Southeast New Mexico	22	86	108
Arkansas	2	28	30
North Louisiana	2	71	73
Gulf Coast Louisiana	23	122	145
Mississippi	5	31	36
Florida	0	1	1
Alabama	0	10	10
Georgia	0	2	2
Montana	5	71	76
Utah	2	5	7
Wyoming	5	66	71
Colorado	1	36	37
Northwest New Mexico	1	13	14
Total September	602	3,021	3,623
Total August	655	3,119	3,774
Difference	53	98	151

APPALACHIAN FIELDS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bradford	*235	283	0	0	11	182
Allegany	*64	93	0	0	3	37
N. Oriskany	4	0	3	1	2	16
Middle dist.	8	7	1	3	0	8
Butler-Armstrong	4	4	1	0	2	7
Southwest Pennsylvania	22	4	7	13	8	60
West Virginia	58	41	6	45	36	152
Ttl. Sept.	395	432	18	62	62	462
Ttl. Aug.	468	570	31	82	56	452
Difference	73	138	13	20	6	10

*Includes water-intake wells.

OHIO

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allen	0	0	0	0	0	1
Ashland	2	5	1	0	2	4
Athens	4	0	2	2	4	16
Auglaize	1	0	1	0	0	0
Belmont	0	0	0	0	0	1
Coshocton	1	0	0	1	1	2
Cuyahoga	0	0	0	0	1	3
Fairfield	1	0	1	0	0	3
Gallia	1	0	0	1	0	1
Geauga	0	0	0	0	0	1
Guernsey	1	1	0	1	2	8
Harrison	0	0	0	0	0	2
Hocking	2	22	1	0	0	1
Holmes	4	0	3	1	3	6
Jackson	1	0	0	1	0	1
Knox	5	40	2	2	3	5
Lake	0	0	0	0	0	2
Lawrence	2	0	0	2	3	3
Licking	15	24	1	9	7	18
Lorain	5	0	4	1	0	5
Mahoning	1	0	1	0	0	0
Medina	14	80	7	0	4	4
Meigs	3	0	0	3	1	7
Monroe	4	8	1	1	1	13
Morgan	3	0	1	2	0	3
Muskingum	4	0	1	3	1	8
Noble	5	9	1	1	3	12
Perry	4	90	2	1	3	12
Richland	1	0	0	1	0	1
Seneca	0	0	0	0	0	1
Stark	2	0	0	2	1	6
Summit	1	0	0	1	0	1
Tuscarawas	1	0	0	1	3	10
Van Wert	1	25	0	0	0	0
Vinton	0	0	0	0	0	1
Washington	4	0	2	2	3	14
Wayne	2	0	1	1	1	1
Ttl. Sept.	95	304	33	40	47	177
Ttl. Aug.	108	539	42	40	46	154
Difference	13	235	9	0	1	23

EASTERN KENTUCKY

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Knott	2	0	0	2	1	6
Floyd	2	0	0	2	1	3
Martin	1	0	0	1	1	2
Pike	0	0	0	0	1	4
Johnson	1	5	0	0	0	1
Lee	2	1	1	0	0	5
Estil	0	0	0	0	0	1
Carter	0	0	0	0	0	1
Greenup	0	0	0	0	0	1
Morgan	0	0	0	0	0	4
Breathitt	0	0	0	0	0	1
Elliott	0	0	0	0	0	1
Magoffin	0	0	0	0	0	1
Wolfe	0	0	0	0	1	0
Ttl. Sept.	8	6	1	5	5	31
Ttl. Aug.	27	65	7	11	6	42
Difference	19	59	6	6	1	11

Gas production from above wells—combined—8,933,000 cu. ft.

WESTERN KENTUCKY

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Breckinridge	0	0	0	0	0	1
Butler	2	5	1	0	0	3
Christian	0	0	0	0	0	2
Daviess	18	1,630	3	0	0	17
Edmonson	1	0	1	0	0	0
Grayson	0	0	0	0	0	2
Hancock	3	0	3	0	0	4
Henderson	7	645	5	0	0	4
Hopkins	0	0	0	0	0	2
Larue	0	0	0	0	0	1
Logan	0	0	0	0	0	1
McLean	5	370	1	0	0	5
Muhlenburg	0	0	0	0	0	1
Ohio	14	146	7	0	0	14
Webster	0	0	0	0	0	1
Ttl. Sept.	50	2,796	21	0	0	58
Ttl. Aug.	47	2,103	22	2	0	56
Difference	3	693	1	2	0	2

MICHIGAN

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegan	23	2,276	10	0	10	26
Arenac	8	3,895	4	1	0	10
Barry	0	0	0	0	0	3
Bay	0	0	0	0	0	1
Berrien	0	0	0	0	1	2
Calhoun	0	0	0	0	0	1
Cass	1	0	1	0	0	2
Chippewa	1	0	1	0	0	1
Clare	6	208	4	1	1	10
Gladwin	1	800	0	0	0	5
Gratiot	0	0	0	0	1	2
Hillsdale	0	0	0	0	0	1
Huron	0	0	0	0	4	2
Ingham	0	0	0	0	0	1
Isabella	6	798	2	0	2	8
Kalamazoo	0	0	0	0	0	1
Kent	6	250	4	1	2	7
Lenawee	2	0	2	0	0	1
Mackinac	0	0	0	0	0	1
Mecosta	0	0	0	0	0	1
Midland	2	310	0	0	1	3
Missaukee	3	0	0	3	0	1
Monroe	1	0	1	0	0	10
Montcalm	2	0	1	1	2	5
Muskegon	1	0	0	0	1	1
Oakland	2	0	2	0	0	1
Ogemaw	3	80	0	0	0	2
Osceola	3	0	2	1	0	2
Otsego	0	0	0	0	0	2
Ottawa	7	284	1	0	1	10
Roscommon	0	0	0	0	0	1
St. Clair	0	0	0	0	0	1
St. Joseph	0	0	0	0	0	1
Shiawassee	0	0	0	0	0	1
Tuscola	1	150	0	0	0	2
Van Buren	7	243	4	0	2	5
Wayne	0	0	0	0	0	1
Ttl. Sept.	84	9,302	39	8	28	135
Ttl. Aug.	91	5,289	55	3	41	142
Difference	7	4,013	16	5	13	7

*Gas production in million cubic feet: Arenac, 0.613; Clare, 7.83; Kent, 1.0; Missaukee, 24.04; Montcalm, 9.16; Osceola, 17.25.

ILLINOIS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bond	13	1,009	2	1	0	5
Clark	2	0	2	0	0	4
Clay	0	0	0	0	0	1
Clinton	19	517	9	0	2	12
Crawford	1	0	1	0	0	0
Cumberland	1	0	1	0	0	3
Douglas	1	0	1	0	0	0
Edwards	13	8,408	2	0	2	9
Fayette	52	5,233	9	0	13	33
Franklin	0	0	0	0	0	5
Gallatin	2	212	0	0	0	0
Hamilton	6	725	2	0	2	15
Jackson	1	0	0	0	0	0
Jasper	6	3,260	1	0	2	5
Jefferson	4	0	4	0	1	1
Lawrence	4	461	2	0	0	0
Logan	1	0	1	0	0	0
McDonough	2	0	2	0	0	2
Macoupin	1	0	1	0	0	0
Madison	3	0	3	0	0	0
Marion	63	16,162	9	0	3	37
Monroe	1	0	1	0	0	0
Montgomery	6	5	5	0	0	1
Pike	1	0	1	0	0	0
Randolph	1	0	1	0	1	0
Richland	8	1,653	2	0	0	10
St. Clair	0	0	0	0	3	0
Schuyler	1	0	1	0	0	0
Scott	1	0	1	0	0	0
Shelby	1	0	1	0	0	0
Wabash	23	3,378	4	0	5	17
Washington	10	171	7	0	0	3
Wayne	36	10,224	1	0	5	18
White	50	8,549	4	0	11	46
Ttl. Sept.	334	59,967	81	1	50	224
Ttl. Aug.	424	121,659	113	2	64	324
Difference	90	61,693	32	1	14	100

INDIANA

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Benton	0	0	0	0	0	1
Blackford	0	0	0	0	1	0
Boone	1	0	1	0	0	1
Crawford	0	0	0	0	0	1
Daviess	1	15	0	0	1	5
Decatur	0	0	0	0	2	0
Floyd	0	0	0	0	0	1
Gibson	13	2,438	1	1	6	20
Greene	0	0	0	0	0	1
Hamilton	0	0	0	0	2	0
Hancock	0	0	0	0	0	1
Harrison	0	0	0	0	0	1
Hendricks	0	0	0	0	0	1
Henry	0	0	0	0	0	1
Jackson	0	0	0	0	1	0
Jay	0	0	0	0	0	2
Jasper	0	0	0	0	1	1
Knox	0	0	0	0	0	1
Lake	0	0	0	0	0	1
Madison	0	0	0	0	0	1
Marion	1	0	0	1	0	0
Martin	0	0	0	0	0	1
Newton	0	0	0	0	0	1
Orange	0	0	0	0	0	2
Pike	0	0	0	0	0	2
Porter	1	0	1	0	2	2
Posey	18	2,468	4	0	7	9
Potter	1	0	1	0	0	0
Randolph	1	0	0	1	2	5
Spencer	10	41	6	1	2	7
Sullivan	0	0	0	0	0	1
Vanderburg	0	0	0	0	1	2
Vigo	0	0	0	0	1	0
Warrick	0	0	0	0	0	1
Whitley	1	0	0	1	0	0
Ttl. Sept.	48	4,962	14	6	28	72
Ttl. Aug.	66	4,816	23	7	33	87
Difference	18	146	9	1	5	15

*Gas production in million cubic feet: Daviess, 0.23; Gibson, 2.0; Marion, 0.055; Randolph, 0.08; Spencer, 0.5.

KANSAS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	2	0	2	0	0	4
Barton	17	5,537	2	1	3	25
Brown	0	0	0	0	1	0
Butler	9	1,012	3	0	1	15
Cowley	4	187	2	0	2	10
Douglas	0	0	0	0	0	2
Ellis	11	3,481	2	0	2	12
Ellsworth	19	3,650	4	0	4	24
Grant	2	0	0	2	0	0
Greenwood	10	80	5	0	3	18
Jefferson	1	0	0	1	0	2
Johnson	1	0	1	0	0	3
Kearny	0	0	0	0	0	1
Kingman	1	487	0	0	0	0
Leavenworth	0	0	0	0	0	1
Lyon	1	0	1	0	0	0
McPherson	14	5,542	2	1	2	21
Marion	2	306	1	0	1	5
Ness	1	225	0	0	0	0
Nemaha	0	0	0	0	0	1
Phillips	1	858	0	0	1	0
Pratt	1	0	1	0	0	4
Reno	1	37	0	0	0	2
Rice	4	925	1	0	3	13
Rooks	4	1,298	1	0	1	7
Russell	11	7,661	0	0	5	24
Sedgwick	1	0	1	0	0	0
Shawnee	1	0	1	0	0	0
Stafford	10	5,281	1	0	3	18
Stephens	0	0	0	0	0	1
Trego	0	0	0	0	0	1
Woodson	0	0	0	0	0	2
Tt. Sept.	132	36.567	31	5	32	216
Ttl. Aug.	195	65,448	28	5	28	226
Difference	63	28,881	3	0	4	10

OKLAHOMA

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	0	0	0	0	0	1
Beckham	0	0	0	0	0	2
Caddo	5	937	1	1	2	9
Carter	13	1,375	1	0	4	11
Choctaw	1	0	1	0	0	0
Comanche	1	5	0	0	0	2
Cotton	0	0	0	0	0	1
Creek	15	681	6	1	2	11
Cleveland	0	0	0	0	0	1
Garfield	1	157	0	0	0	0
Garvin	1	0	1	0	0	0
Grady	2	18	0	0	1	5
Hughes	2	0	1	1	1	4
Jackson	3	94	0	0	1	5
Johnston	0	0	0	0	0	1
Kay	2	0	2	0	1	5
Kingfisher	1	0	1	0	0	0
Kiowa	2	127	0	0	1	3
Latimer	1	0	0	1	0	0
Lincoln	2	0	2	0	2	7
Logan	0	0	0	0	1	2
Marshall-Bryan	2	812	0	0	0	10
Muskogee	3	12	2	0	1	3
Noble	1	0	1	0	0	3
Okfuskee	6	1,229	2	1	3	12
Oklahoma	3	1,332	0	1	2	11
Okmulgee	7	60	1	3	2	12
Osage	9	284	3	1	1	13
Pawnee	2	0	2	0	0	3
Payne	4	272	1	1	0	5
Pittsburg	1	0	0	1	0	0
Pontotoc	10	519	4	0	2	9
Pottawatomie	7	1,102	4	0	2	8
Seminole	4	120	2	0	4	12
Stephens	4	275	1	0	1	7
Texas	0	0	0	0	0	3
Tillman	3	828	1	0	1	3
Tulsa	5	15	1	1	2	10
Wagoner	3	15	2	0	1	7
Miscellaneous	0	0	0	0	5	32
Ttl. Sept.	126	10,269	43	13	43	233
Ttl. Aug.	201	22,704	82	13	31	243
Difference	75	12,435	39	0	12	10

NORTH CENTRAL TEXAS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	40	19,997	6	0	21	35
Bell	0	0	0	0	0	1
Brown	4	13	2	0	1	3
Baylor	6	271	4	0	1	2
Callahan	7	8	5	1	2	7
Clay	23	5,290	9	0	8	19
Coleman	5	1,104	1	1	1	8
Comanche	0	0	0	0	0	4
Cooke	10	2,908	0	0	6	12
Coryell	1	0	1	0	0	0
Denton	0	0	0	0	0	2
Erath	0	0	0	0	0	3
Eastland	1	0	1	0	1	7
Fisher	0	0	0	0	0	2
Foard	3	577	0	0	0	1
Grayson	0	0	0	0	0	2
Hamilton	0	0	0	0	0	3
Hardeman	0	0	0	0	0	1
Hood	0	0	0	0	0	1
Jack	7	579	3	0	3	11
Jones	6	742	1	0	2	16
Montague	13	8,614	4	0	5	11
Palo Pinto	2	0	1	1	0	5
Parker	1	0	1	0	0	4
Runnels	0	0	0	0	0	2
San Saba	0	0	0	0	0	1
Shackelford	14	113	9	0	7	13
Stephens	2	951	0	0	1	5
Tarrant	0	0	0	0	0	2
Taylor	1	0	1	0	0	2
Throckmorton	1	0	1	0	0	0
Wichita	27	9,380	7	0	29	32
Wilbarger	3	0	3	0	11	9
Wise	0	0	0	0	0	1
Young	10	3,280	5	0	9	23
Ttl. Sept.	187	53,827	65	3	108	250
Ttl. Aug.	124	30,627	40	2	109	242
Difference	63	23,200	25	1	1	8

WEST TEXAS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	0	0	0	0	0	4
Crane	10	21,753	1	0	6	14
Concho	1	0	1	0	0	2
Cochran	0	0	0	0	0	9
Crockett	1	1,828	0	0	1	9
Dawson	2	0	2	0	0	0
Ector	35	31,605	1	0	5	40
Gaines	18	13,126	0	0	3	20
Hockley	1	889	0	0	1	10
Howard	3	0	3	0	0	2
Hudspeth	0	0	0	0	0	2
Irion	0	0	0	0	0	1
Kimble	0	0	0	0	0	3
Mitchell	3	504	1	0	1	1
Pecos	3	101	2	0	1	16
Presidio	0	0	0	0	0	2
Reeves	0	0	0	0	0	1
Schleicher	0	0	0	0	0	1
Scurry	3	595	0	0	1	6
Stonewall	0	0	0	0	0	2
Sutton	0	0	0	0	0	1
Terrell	0	0	0	0	0	1
Terry	0	0	0	0	0	2
Tom Green	0	0	0	0	1	0
Upton	*11	7,903	1	0	2	4
Ward	7	2,706	2	0	1	14
Winkler	3	450	0	0	0	8
Yoakum	25	23,231	0	0	4	27
Ttl. Sept.	126	104,691	14	0	27	202
Ttl. Aug.	142	120,194	7	1	44	199
Difference	16	15,503	7	1	17	3

*Includes 6 old wells drilled deeper in McCamey field.

TEXAS PANHANDLE

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	10	925	0	3	3	8
Childress	2	0	2	0	0	0
Cottle	0	0	0	0	0	2
Dickens	0	0	0	0	0	1
Gray	5	982	0	0	8	18
King	0	0	0	0	0	1
Lubbock	0	0	0	0	1	0
Hutchinson	13	3,630	0	0	14	25
Motley	0	0	0	0	0	1
Moore	3	0	0	3	1	3
Ochiltree	0	0	0	0	0	1
Sherman	1	0	0	1	0	0
Swisher	0	0	0	0	0	1
Wheeler	2	165	0	0	2	5
Ttl. Sept.	36	5,702	2	7	29	66
Ttl. Aug.	55	9,443	1	11	30	68
Difference	19	3,741	1	4	1	2

EASTERN TEXAS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	3	502	0	0	0	4
Camp	1	152	0	0	0	0
Delta	0	0	0	0	1	0
Ellis	0	0	0	0	0	1
Falls	0	0	0	0	0	2
Fannin	0	0	0	0	1	2

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Franklin	5	1,079	0	0	0	2
Freestone	3	415	0	0	0	5
Gregg	19	1,029	1	0	4	5
Henderson	3	60	1	1	1	3
Houston	0	0	0	0	0	3
Kaufman	0	0	0	0	0	2
Leon	0	0	0	0	0	1
Limestone	1	0	1	0	0	4
Nacogdoches	0	0	0	0	0	1
Navarro	2	0	2	0	1	4
Red River	0	0	0	0	0	1
Rusk	5	116	0	0	2	3
Robertson	1	0	1	0	0	0
Smith	3	36	0	2	4	5
Titus	2	382	0	0	0	1
Upshur	3	120	1	0	0	2
Van Zandt	1	0	1	0	1	0
Wood	0	0	0	0	0	2
Ttl. Sept.	52	3,891	8	3	15	53
Ttl. Aug.	43	2,189	11	2	21	54
Difference	9	1,702	3	1	6	1

EAST TEXAS BORDER

Bowie	0	0	0	0	0	2
Cass	0	0	0	0	0	2
Harrison	2	5	0	1	0	2
Marion	5	50	0	0	1	6
Panola	0	0	0	0	0	1
Sabine	0	0	0	0	0	1
San Augustine	0	0	0	0	1	0
Shelby	1	0	1	0	0	4
Ttl. Sept.	8	55	1	1	2	18
Ttl. Aug.	14	195	3	5	6	18
Difference	6	140	2	4	4	0

*Gas production: Harrison County, 8,500,000 cu. ft.

UPPER TEXAS GULF COAST

Alta Loma	1	1,214	0	0	0	1
Anahuac	4	2,590	0	0	0	3
Bay City	1	200	0	0	0	1
Batson	0	0	0	0	0	1
Boling	0	0	0	0	0	1
Caplen	0	0	0	0	0	1
Chocolate Bayou	0	0	0	0	0	2
Clear Lake	4	216	2	0	1	1
Clam Lake	1	121	0	0	1	0
Danbury	0	0	0	0	0	2
Dickinson	2	313	1	0	1	1
Esperson	1	592	0	0	0	2
Fannett	1	868	0	0	0	2
Fairbanks	2	301	0	0	0	2
Greens Lake	0	0	0	0	0	1
Ganado	0	0	0	0	0	1
Hardin	1	55	0	0	1	0
Hastings	0	0	0	0	0	1
Hillje	5	402	0	1	0	3
Hull	5	748	1	0	0	2
Humble	2	211	0	0	0	2
League City	2	502	0	0	1	1
La Belle	1	750	0	0	0	1
Lockridge	1	17	0	0	0	0
Lolita	7	1,244	1	0	1	6
Lovells Lake	5	774	0	0	0	2
Manvel	1	0	1	0	0	1
Markham	0	0	0	0	0	1
Martha	1	15	0	0	0	0
Mt. Houston	2	455	0	1	0	1
Ogburn	1	206	0	0	0	1
N. Markham	0	0	0	0	0	1
Old Ocean	2	661	0	0	1	7
Pickett Ridge	2	147	0	0	1	0
Pierce Jctn.	0	0	0	0	0	1
Port Neches	0	0	0	0	0	2
Raccoon Bend	0	0	0	0	0	2
Red Fish Reef	1	24	0	0	0	0
Rowan	1	168	0	0	0	2
Rockland	1	0	1	0	0	0
Seabreeze	0	0	0	0	0	1
Saratoga	0	0	0	0	0	1
Segno	3	1,240	0	0	0	2
S. China	2	178	0	0	0	2
Sour Lake	1	283	0	0	0	1
Spurger	3	834	0	0	1	1
S. Liberty	1	150	0	0	0	1
Sheridan	0	0	0	0	1	0
S. Cotton Lake	2	151	0	0	0	0
Thompson	3	996	0	0	0	3
Tomball	3	0	1	2	1	1
Van Vleck	1	311	0	0	1	0
W. Beaumont	1	442	0	0	1	0
W. Ranch	5	2,089	1	0	2	7
W. Columbia	3	1,460	0	0	1	4
Withers	13	1,736	0	0	1	4
Miscellaneous	10	0	10	0	0	18
Ttl. Sept.	109	22,664	19	4	17	105
Ttl. Aug.	90	24,052	18	2	27	104
Difference	19	1,388	1	2	10	1

LOWER TEXAS GULF COAST

Agua Dulce	1	0	0	1	0	2
Baffin Bay	0	0	0	0	1	0
Ben Bolt	0	0	0	0	0	1
Bloomington	1	15	0	0	0	1
Clara Driscoll	0	0	0	0	0	2
Coletto Crk.	1	0	0	1	0	2
E. Alice	0	0	0	0	0	1
E. McFaddin	1	0	0	0	0	1
E. Plymouth	1	0	1	0	0	0
E. Premont	1	428	0	0	0	0
E. White Pt.	2	378	0	0	0	2
E. Flour Bluff	1	160	0	0	0	2
Edwards Ranch	1	0	0	1	0	1
Gallagher	1	167	0	0	0	1
Heyser	3	200	1	0	0	1
Keeran	0	0	0	0	0	2
Kingsville	1	0	1	0	0	0
La Rosa	1	202	0	0	0	0
McCampbell	2	170	0	0	0	5
McFaddin	2	161	0	0	0	1
Midway	1	74	0	0	0	3
Orange Grove	3	512	0	0	1	1
Plymouth	1	5	0	0	0	0
Premont	1	20	0	0	0	0
Refugio	1	50	0	0	0	0
Richard King	0	0	0	0	2	0
S. Alfred	1	0	1	0	0	0
Shield	0	0	0	0	0	2
S. Clara Driscoll	2	215	0	0	1	2
Stratton	3	319	0	0	0	6
Telferner	0	0	0	0	0	1
Thomaston	0	0	0	0	0	1
Tomoconnor	3	1,962	0	0	1	1
Victoria	0	0	0	0	0	1
Wade City	10	1,107	2	0	2	4
Miscellaneous	5	0	5	0	2	12
Ttl. Sept.	51	6,145	11	3	10	59

SOUTH CENTRAL TEXAS

Bee Creek	0	0	0	0	0	1
Buchanan	1	0	1	0	0	0
Cedar Creek	1	7	0	0	0	0
Chicon Lake	0	0	0	0	0	2
Day	0	0	0	0	1	0
Darst Creek	1	42	0	0	0	1
Elm Creek	0	0	0	0	0	2
Gas Ridge	1	0	1	0	0	3
Pearsall	1	83	0	0	0	4
Red Rock	0	0	0	0	0	1
Rockdale	1	3	0	0	0	1
Salt Flat	0	0	0	0	1	0
Somerset	1	0	1	0	0	0
Timon	0	0	0	0	1	0
Miscellaneous	9	0	8	1	1	24
Ttl. Sept.	16	135	11	1	4	39

SOUTH TEXAS

Blas Uribe	1	0	1	0	0	1
Boyle	3	85	2	0	1	1
Bridwell	0	0	0	0	0	2
Bruni	1	0	1	0	0	0
Calliham	2	0	2	0	1	0
Casa Blanca	1	0	1	0	0	1
Cedro Hill	5	79	1	0	0	1
Colorado	8	1,289	0	0	1	4
Cuellar	0	0	0	0	0	1
Driscoll	1	268	0	0	0	1
Glen	14	911	2	1	2	2
Gutierez	1	5	2	0	0	0
Hoffman	0	0	0	0	0	2
Kelsey	1	104	0	0	0	2
Lopeno	0	0	0	0	1	0
Lundell	5	153	1	0	1	1
Manila	4	215	1	0	1	1
N. Rincon	0	0	0	0	0	2
O'Hern	1	0	1	0	0	0
Oilton	0	0	0	0	1	0
Rincon	1	202	0	0	0	3
Samfordyce	2	123	0	0	0	2
Sun	1	173	0	0	0	1
Washburn	1	90	0	0	0	0
West Cole	1	17	0	0	1	0
White Creek	3	279	0	0	1	1
Miscellaneous	20	0	20	0	7	14
Ttl. Sept.	77	3,993	33	1	18	43

SOUTHEAST NEW MEXICO

Chaves	1	0	1	0	3	1
De Baca	0	0	0	0	0	1
Dona Ana	0	0	0	0	0	2
Eddy	17	1,059	7	0	7	44
Lea	14	5,557	2	0	12	35
Otero	0	0	0	0	0	2
Roosevelt	1	0	1	0	0	0
Socorro	0	0	0	0	0	1
Ttl. Sept.	33	6,616	11	0	22	86
Ttl. Aug.	32	8,997	8	0	24	92
Difference	1	2,381	3	0	2	6

ARKANSAS

Arkansas	0	0	0	0	0	1
Clark	0	0	0	0	0	1
Columbia	3	785	0	0	1	4
Dallas	0	0	0	0	0	1
Howard	0	0	0	0	0	1
Lafayette	2	600	0	0	0	2
Lonoke	0	0	0	0	0	3
Miller	1	0	1	0	0	2
Nevada	2	0	1	1	0	1
Ouachita	0	0	0	0	0	1
Prairie	0	0	0	0	0	1
Paluski	1	0	1	0	0	0
Saline	0	0	0	0	0	3
Union	8	2,305	0	0	1	7
Ttl. Sept.	17	3,690	3	1	2	28
Ttl. Aug.	15	675	9	0	2	30
Difference	2	3,015	6	1	0	2

*Gas production: Nevada County, 1,000,000 cu. ft.

NORTH LOUISIANA

Bienville	1	0	0	1	0	0
Bossier	6	275	2	0	0	7
Caddo	32	1,230	4	1	1	20
Caldwell	1	0	1	0	0	1
Claiborne	1	190	0	0	0	6
Concordia	0	0	0	0	0	1
De Soto	2	30	1	0	0	5
Franklin	1	0	1	0	0	0
Grant	0	0	0	0	0	2
La Salle	23	2,840	1	1	1	10
Lincoln	1	0	1	0	0	0
Morehouse	2	0	0	2	0	2
Ouachita	2	0	0	2	0	1
Red River	1	5	0	0	0	2
Sabine	0	0	0	0	0	5
Tensas	1	0	1	0	0	1
Union	3	0	0	3	0	2
Webster	1	480	0	0	0	6
Ttl. Sept.	78	5,050	12	10	2	71
Ttl. Aug.	41	3,890	9	2	3	71
Difference	37	1,160	3	8	1	0

*Gas production: Bienville Parish, 50,000,000 cu. ft.; Caddo Parish, 280,000 cu. ft. La Salle Parish, 12,000,000 cu. ft.; Morehouse Parish, 4,000,000 cu. ft.; Ouachita Parish, 5,000,000 cu. ft.; Union Parish, 4,500,000 cu. ft.

COASTAL LOUISIANA

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anse La Butte	6	764	4	0	1	6
Barataria	2	624	0	0	1	0
Bateman Lake	2	0	0	2	2	0
Bayou Blue	2	139	1	0	0	1
Bayou Boullion	2	0	2	0	0	2
Bayou de Glaize	0	0	0	0	0	1
Bay St. Elaine	1	0	1	0	0	1
Bayou Pigeon	1	518	0	0	1	0
Belle Chasse	0	0	0	0	0	1
Caillou Island	0	0	0	0	0	1
Charenton	2	80	1	0	0	4
Choctaw	0	0	0	0	0	1
Chalkley	0	0	0	0	1	1
Chacahoula	0	0	0	0	0	2
Cheneyville	0	0	0	0	0	2
Cameron Meadows	0	0	0	0	1	1
Darrow	2	454	1	0	0	1
Delta Farms	0	0	0	0	0	2
Dog Lake	1	178	0	0	0	0
E. Baton Rouge	0	0	0	0	0	2
Edgerly	0	0	0	0	0	2
Eola	1	319	0	0	0	2
Erath	0	0	0	0	0	1
Fausse Pt.	0	0	0	0	0	3
Gibson	1	392	0	0	0	1
Grand Bay	1	779	0	0	0	2
Golden Meadow	8	1,102	1	0	1	6
Garden Island	0	0	0	0	0	1
Gueydan	0	0	0	0	0	1
Hackberry	1	473	0	0	1	4
Happytown	0	0	0	0	0	1
Horseshoe Bayou	1	356	0	0	1	0
Iowa	0	0	0	0	0	3
Jeanerette	0	0	0	0	0	1
Jennings	1	314	0	0	0	4
Jefferson Island	0	0	0	0	0	1
La Fourche Crossing	0	0	0	0	0	1
Lafitte	2	365	1	0	1	1
Lake Long	1	275	0	0	0	0
Lake Mongoulois	0	0	0	0	0	1
Lake Hermitage	0	0	0	0	0	1
Lake Pelto	0	0	0	0	0	1
La Place	0	0	0	0	0	1
La Pice	0	0	0	0	0	1
Lake Salvador	1	840	0	0	0	1
Lockport	1	90	0	0	0	0
Leesville	1	206	0	0	0	2
Neale	4	1,193	1	0	0	3
N. Crowley	2	659	1	0	0	2
New Iberia	3	150	2	0	1	4
Paradis	0	0	0	0	0	1
Port Barre	0	0	0	0	0	2
Plumb Bob	0	0	0	0	2	0
Potash	2	389	1	0	1	0
Quarantine Bay	0	0	0	0	0	1
Ritchie	1	0	0	1	0	0
Raceland	1	150	0	0	0	0
S. China	1	40	0	0	0	0
S. Crowley	1	779	0	0	0	1
S. Roanoke	0	0	0	0	0	1
Starks	1	117	0	0	1	0
Schooner Bayou	0	0	0	0	1	1
Sulphur	0	0	0	0	0	2
Sweet Lake	0	0	0	0	0	1
Valentine	0	0	0	0	0	1
Vermillion Bay	0	0	0	0	0	1
Ville Platte	5	1,559	1	0	2	7
Venice	1	0	1	0	0	1
Welsh	0	0	0	0	0	2
W. Cote Blanche	1	0	1	0	0	1
W. Lake Verrett	0	0	0	0	0	1
White Castle	1	384	0	0	0	1
Woodlawn	2	517	0	0	1	2
Miscellaneous	2	0	2	0	3	14
Ttl. Sept.	69	14,205	22	3	23	122
Ttl. Aug.	79	18,020	15	0	23	98
Difference	10	3,815	7	3	0	24

MISSISSIPPI

Attala	1	0	1	0	0	3
Carroll	0	0	0	0	1	0
Choctaw	0	0	0	0	0	1
Copiah	1	0	1	0	0	0
Grenada	0	0	0	0	2	1
Hinds	1	0	1	0	0	0
Itawamba	0	0	0	0	0	1
Jefferson Davis	1	0	1	0	0	0
Jones	1	0	1	0	0	1
Kemper	0	0	0	0	0	1
Lamar	1	0	1	0	0	1
Lee	0	0	0	0	0	1
Marshall	0	0	0	0	0	1
Montgomery	1	0	1	0	0	1
Newton	1	0	1	0	0	0
Pike	0	0	0	0	0	1
Prentiss	0	0	0	0	0	1
Scott	1	0	1	0	0	0
Sharkey	0	0	0	0	0	1
Simpson	1	0	1	0	0	0
Tishomingo	0	0	0	0	0	1
Warren	0	0	0	0	0	3
Washington	1	0	1	0	0	0
Wayne	1	0	1	0	0	1
Yalobusha	0	0	0	0	0	1
Yazoo	15	4,435	5	0	2	10
Ttl. Sept.	27	4,435	17	0	5	31
Ttl. Aug.	16	1,960	11	0	9	37
Difference	11	2,475	6	0	4	6

ALABAMA

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Colbert	0	0	0	0	0	1
Fayette	0	0	0	0	0	1
Franklin	0	0	0	0	0	1
Houston	0	0	0	0	0	1
Lawrence	1	0	1	0	0	1
Madison	1	0	1	0	0	0
Marion	0	0	0	0	0	2
Mobile	0	0	0	0	0	1
Morgan	1	0	1	0	0	1
Walker	0	0	0	0	0	1
Ttl. Sept.	3	0	3	0	0	10
Ttl. Aug.	1	0	1	0	1	7
Difference	2	0	2	0	1	3

GEORGIA

Clinch	1	0	1	0	0	1
Montgomery	1	0	1	0	0	0
Truetlen	0	0	0	0	0	1
Ttl. Sept.	2	0	2	0	0	2
Ttl. Aug.	0	0	0	0	0	4
Difference	2	0	2	0	0	2

FLORIDA

Dade	0	0	0	0	0	1
Levy	2	0	2	0	0	0
Suwannee	2	0	2	0	0	0
Ttl. Sept.	4	0	4	0	0	1
Ttl. Aug.	0	0	0	0	0	5
Difference	4	0	4	0	0	4

MONTANA

Big Horn	0	0	0	0	0	2
Blaine	0	0	0	0	0	2
Carbon	0	0	0	0	0	6
Fallon	1	0	0	1	0	2
Fergus	0	0	0	0	0	3
Glacier	8	722	1	1	2	17
Hill	0	0	0	0	0	1
Liberty	0	0	0	0	1	1
Petroleum	0	0	0	0	0	2
Phillips	2	0	0	2	0	11
Pondera	1	0	1	0	0	1
Toole	15	778	6	2	2	15
Miscellaneous	0	0	0	0	0	8
Ttl. Sept.	27	1,500	8	6	5	71
Ttl. Aug.	27	1,369	4	7	10	57
Difference	0	131	4	1	5	14

UTAH

Daggett	2	0	0	2	0	0
Miscellaneous	0	0	0	0	2	5
Ttl. Sept.	2	0	0	2	2	5
Ttl. Aug.	0	0	0	0	3	5
Difference	2	0	0	2	1	0

WYOMING

Big Horn	1	0	1	0	1	3
Carbon	1	0	1	0	1	2
Converse	0	0	0	0	1	3
Crook	0	0	0	0	0	1
Fremont	2	30	0	1	0	2
Hot Springs	0	0	0	0	0	2
Lincoln	0	0	0	0	0	4
Natrona	2	171	0	0	0	6
Niobrara	8	5,849	1	0	1	8
Park	0	0	0	0	0	3
Platte	0	0	0	0	0	1
Sublette	4	488	2	0	1	7
Sweetwater	0	0	0	0	0	8
Uinta	0	0	0	0	0	5
Washakie	0	0	0	0	0	2
Weston	2	11	0	0	0	9
Ttl. Sept.	20	6,549	5	1	5	66
Ttl. Aug.	20	16,951	5	0	7	74
Difference	0	10,402	0	1	2	8

COLORADO

Archuleta	0	0	0	0	0	1
Boulder	0	0	0	0	0	1
Custer	0	0	0	0	0	1
El Paso	0	0	0	0	0	1
Fremont	0	0	0	0	0	2
Garfield	0	0	0	0	0	1
Huerfano	0	0	0	0	0	8
Jackson	0	0	0	0	0	1
La Plata	0	0	0	0	0	1
Larimer	0	0	0	0	0	1
Las Animas	0	0	0	0	0	1
Lincoln	0	0	0	0	0	1
Logan	0	0	0	0	0	1
Moffat	1	14	0	0	0	5
Montezuma	0	0	0	0	0	1
Ouray	0	0	0	0	0	1
Park	0	0	0	0	0	1
Pueblo	0	0	0	0	0	1
Rio Blanco	0	0	0	0	1	4
Routt	0	0	0	0	0	1
Washington	0	0	0	0	0	1
Ttl. Sept.	1	14	0	0	1	36
Ttl. Aug.	2	90	0	0	0	33
Difference	1	76	0	0	1	3

NORTHWEST NEW MEXICO

McKinley	1	72	0	0	1	2
Bernalillo	0	0	0	0	0	1
San Juan	1	0	0	1	0	5
San Miguel	0	0	0	0	0	1
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	1
Valencia	0	0	0	0	0	2
Ttl. Sept.	2	72	0	1	1	13
Ttl. Aug.	5	226	3	0	1	10
Difference	3	154	3	1	0	3

Mississippi Wildcatting Is Still on Increase

By GEORGE WEBER

JACKSON, Oct. 21.—Drilling in Mississippi increased during the past week, with the staking of two new wildcats and abandonment of none. Tinsley gained one new producer, as several others awaited completion on the pump. Two locations to southeast outposts were made by Love Petroleum Co. Co., newcomers to the feidl. They will be watched with interest, in view of good Woodruff sand sections penetrated in the southeast recently by Union Producing Co.

New wildcats are expected to sustain Mississippi exploration during the next several weeks. Two new tests are due to begin by mid-December in Carroll and Choctaw counties, a Clarke County wildcat is planned for early November and reports indicate that two additional tests may soon be staked in Lincoln and Madison counties.

Geophysical activity continued to show slight decline in Mississippi, as 34 crews remained active in the state. Leasing remained relatively unchanged from the past few weeks.

Tinsley

Due to the recent agreement among operators, Tinsley crude runs have declined to about 13,000 barrels daily, from a maximum daily average exceeding 27,000 barrels in late August and early September. The voluntary proration agreement will halt runs to storage, it is expected, and produced crude will be moved to refineries at Baton Rouge and Vicksburg for processing.

An indicated new outlet for Tinsley crude was reported recently when it was learned on good authority that the Allied Oil Corp, of St. Elmo, Ill. had approached operators with a plan for a year's contract to take 10,000 barrels daily. Whether or not this crude would be processed in Mississippi is not known, but it is expected that it might be moved by tank car to Illinois. Success of the reported offer is not indicated at this time.

Wildcats

The Attala County test, Jones & Crosby 1 Allen is still temporarily shut down at 4,534 ft. The wildcat is of considerable interest, due to the indication of an oil sand at 4,018-25 ft. from an electrical log recently run. The showing is reported to be better than that in the discovery well for the Pickens field, but actual testing alone will show definite prospects for the wildcat. Operators are reported to be planning to set casing and plug back for a test of the horizon later this week.

Core Drilling

A marked tendency toward core drilling is seen in Mississippi. Gulf Refining Co. has been exploring blocks in Montgomery and Scott counties by this method, and the Sun Oil Co. is active in Covington County. Roeser & Pendleton are reported to be planning an extensive core drilling program on the 90,000-acre block in Tallahatchie County if their current wildcat, 1 Ogilvie is a failure.

MISSISSIPPI COMPLETIONS

Tinsley—Yazoo County

Union 6 Twiner, NW NE 1-10-3, pumping 288 bbl., Woodruff sand 4,938-64 ft., T.D. 6,236 ft., set 5½-in. casing 5,483 ft., P.B. 5,355 ft., perf. 4,938-54 ft. and 4,954-65 ft.

MISSISSIPPI DRILLING REPORT

Attala County

Jones & Crosby 1 Allen, SW SW 33-13n-5e, T.D. 4,534 ft., to P.B. and D.S. test 4,018-25 ft.

Grenada County

James Papadakis 1 Holcomb, SE NE 13-22n-2e, rigging up.

Womble & Williams 1 Conn. General Life Ins. Co., NE NW SE 28-23n-5e, T.D. 1,423 ft., S.D.

Jones County

T. N. Smith 1 Hollifield, NW SW NW 20-8n-12w, T.D. 6,237 ft., fishing, Selma 5,480-5,530 ft.

Kemper County

R. M. Crabb et al 1 Land, NW NE 12-10n-14e, drilling 1,813 ft.

Lamar County

Tatum Lumber Co. 1 W. S. F. Tatum, C NE 14-2n-16w, drilling 2,826 ft.

Noxubee County

Adams & Clements 1 Donahoe, SW SW 24-16n-17e, moving in material.

Prentiss County

Home Dev. Co. 1 Allen, SW NE SE 8-7s-9e, drilling 2,193 ft.

Sharkey County

British American Oil Prod. 1 F. B. Houston estate, N½ NE SW 23-11n-7w, T.D. 3,068 ft., S.D.

Tallahatchie County

Roeser & Pendleton 1 Ogilvie, SE NW 32-24n-2e, coring 2,790 ft., top Eutaw 2,780 ft. (samples).

Warren County

W. O. Allen 1 Tom Henry, W½ SW 4-7n-4w, S.D. 5,082 ft., repairs.

Magnolia & Exchange 1 Paxton-Brown, NW NW 13-14n-4e, T.D. 2,510 ft., set 9⅝-in. casing 2,478 ft., drilling plug.

Tishomingo County

Mellen & Gear 1 E. K. Wood, SE SE SE 21-4s-11e, no report, latest report, drilling 400 ft.

Winston County

Frame & Young 1 H. C. Chancellor, NE 9-13n-14e, spudding.

Yazoo County

Arcarea Reserve Co. 1 J. G. Holmes, SE SE 22-12n-1e, drilling sandy shale 3,357 ft.

Edward DeLoach 1 Wilburn, 6-12n-3w, coring 4,947 ft.

Eastern Operations

Alabama had two abandonments during the past week. The deep Mobile County wildcat, Lilly & Temple 1 Lockhart, formerly drilled to a total depth of 6,707 ft. by W. L. McClanahan, has been abandoned without deepening. The wildcat had a reported gas show at 3,475-90 ft. and a reported oil show at 4,550-72 ft. It was planned to carry the test to 8,500 ft. Another Morgan County wildcat, Rohwer's 1-B Hough was abandoned at shallow depth in the Chatanooga.

A second test in Dade County Florida, to be drilled by Wm. G. Blanchard will investigate the possibilities of finding commercial gas production. The 2 Everglades, a southeast offset to the same operator's 1 Everglades has been staked. The first test is shut down, making a small amount of gas.

Efforts are under way for support in deepening a Clinch County Georgie wildcat, and a second Georgia test is drilling below 1,250 ft. The Clinch County test, Georgia Resources, Inc. 1 Gillican is shut down at 1,507 ft. It is believed that the test is in or near the top of the Wilcox formation, and support is being sought to take the test into the Cretaceous, possibly into the Tuscaloosa. Leases are being kept in shape by local interests which financed the test thus far. The Truetlen County wildcat, Rose & Ray 1 Fowler near Soperton has encountered sands down to 1,250 ft. latest reported depth and is drilling ahead. Plans are reported for possible wildcats to drill in Coffee and Grady counties.

ALABAMA COMPLETIONS

Mobile County

Lilly & Temple (formerly W. L. McClanahan) 1 J. R. Lockhart, SE NW SW 24-7s-3w, T.D. 6,707 ft., dry.

Morgan County

F. W. Rohwer 1-B Karl Hough, 2-6s-1w, T.D. 427 ft., dry.

ALABAMA DRILLING REPORT

Colbert County

Mellen & Gear 1 Alsobrook, C S½ SW NW 10-4s-15w, T.D. 1,048 ft., S.D.

Fayette County

B. L. Fillingame 1 Harbin, NW SW 3-16s-12w, T.D. 960 ft., S.D.

Franklin County

E. O. Heath, Jr., 1 W. O. Hester, SW SW 4-6s-12w, drilling hard sandy lime 74 ft., no recent report.

Madison County

J. L. Caldwell et al 1 Joe McCord, NW SE SE 30-1s-2e, T.D. 105 ft., S.D.

W. W. Newman 2 Nichols, NE NW NE 2-6s-2e, T.D. 322 ft., show gas 320 ft.

Walker County

Champlin Oil & Ref. Co. 1 Galloway Coal Co., 12-13s-10w, drilling 2,406 ft.

FLORIDA DRILLING REPORT

Dade County

William G. Blanchard 1 Everglades, SW SW SW 31-53s-35e, flowing small amount gas from 1,200 ft., S.D.

GEORGIA DRILLING REPORT

Clinch County

Georgia Resources, Inc., 1 Gillican, C Lot 200, Land Dist. 12, T.D. 1,507 ft., S.D., may deepen.

Truetlen County

Rose & Ray 1 James Fowler, 6 mi. E Soperton, drilling 1,250 ft.

LEGAL

Department of the Interior, United States Land Office, Buffalo, Wyoming. Notice is hereby given that the oil and gas deposits in the Black Mountain oil field, Wyoming, are offered for leasing to the bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in Circular 1386, in the following units: *Unit No. 1*, T. 42 N., R. 90 W., Sec. 6, Lots 1 and 2; T. 43 N., R. 90 W., Sec. 31, Lots 10 and 11. *Unit No. 2*, T. 43 N., R. 90 W., Sec. 31, SW¼ NE¼, N½ SE¼. *Unit No. 3*, T. 43 N., R. 90 W., Sec. 31, Lots 5 and 6, E½ NW¼. *Unit No. 4*, T. 43 N., R. 90 W., Sec. 31, Lots 7, 8 and 9, NE¼ SW¼. *Unit No. 5*, T. 42 N., R. 90 W., Sec. 6, Lots 3 and 4; T. 42 N., R. 91 W., Sec. 1, Lots 1 and 2. *Unit No. 6*, T. 43 N., R. 91 W., Sec. 25, Lots 1, 2, 3, 4, N½ SW¼. *Unit No. 7*, T. 43 N., R. 91 W., Sec. 35, Lots 1 and 2. *Unit No. 8*, T. 43 N., R. 91 W., Sec. 35, Lots 3 and 4, NE¼ SW¼, NW¼ SE¼. Any two or more of the units listed may be consolidated in a single lease, provided the maximum acreage of such lease is not in excess of that permitted by law, the drilling, royalty and rental requirements to apply to each unit separately. The sale will be held in the office of the Register of the District Land Office in Buffalo, Wyoming at 10:00 o'clock, A.M., on November 20, 1940. The successful bidder will be required to deposit on the day of the sale a certified check on a solvent bank, or cash, for 1/5 of the bid, and file a showing of qualifications to receive a lease, required by section 7 of General Land Office Circular 1386. The remaining 4/5 of the amount bid, together with the annual rental in advance at the rate of $1 per acre, must be paid, and a $5000 corporate surety bond must be furnished prior to the issuance of the lease. The successful bidder of Unit No. 4 will also be required to reimburse the owner of the equipment in the well on the land for the reasonable value thereof, estimated at $12,292. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

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Personal Paragraphs

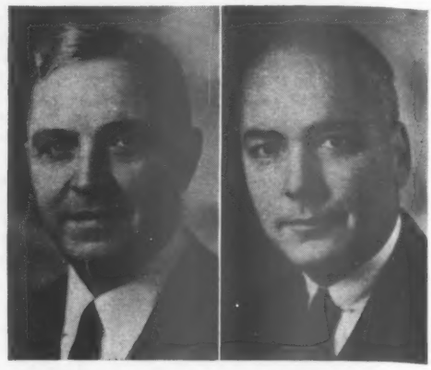
W. O. NARRY, traffic manager of Richfield Oil Corp., and C. E. ZIEGLER, traffic manager of General Petroleum Corp., were elected directors of the Los Angeles Transportation Club at the annual meeting of the club early this week.

DR. NORMAN D. FITZ GERALD, of the department of petroleum economics of the Chase National Bank, New York City, spoke to more than a hundred executives of the Texas Corp. on the subject of "Economic Problems of the Petroleum Industry" at the Texaco Round Table in the Chrysler Building in New York on October 9.

RUSH GREENSLADE, vice president and general manager of Gulf Oil Corp., and J. L. SHAKELY, president of Frick-Reid Supply Co., both of Tulsa, have been named chairman and cochairman of the directors' division of the Tulsa Community Fund campaign.

S. H. McALLISTER, of Shell Development Co., will discuss "Processes for the Conversion of Light Hydrocarbons to High Antiknock Aviation Fuels" at the annual fall meeting of the California Natural Gasoline Association to be held in Los Angeles, Calif., November 1, 1940.

JOSEPH G. ALTHER, vice president and general manager of Universal Oil Products Co., Chicago, has been elected a trustee of Illinois Institute of Technology, Chicago, a new university created by the merger of Armour Institute of Technology and Lewis Institute. JOHN J. MITCHELL, also a vice president and treasurer



JOSEPH G. ALTHER *JOHN J. MITCHELL*

of Universal, has been a trustee of Armour Institute of Technology for many years and now is also a member of the board of the new institution.

T. S. COOKE, of the foreign refining department of the Standard Oil Co. of New Jersey, has returned to South America after a visit here.

RUSH BLODGET, executive vice president of the Oil Producers Agency of California, is back at his desk in Los Angeles after a business trip to the East.

PHIL GULLY, consulting geologist and paleontologist formerly located in Beeville, Tex., has opened offices in the Milam Building in San Antonio, Tex.

WILLIAM R. DAVIS, formerly production superintendent of Columbia Oil & Gas Co., stationed at Dorr, Mich., last week assumed the same duties for Walter L. McClanahan and is now located at Overisel, Mich.

H. D. BROWN, JR., production superintendent, Brundred Oil Corp., Oil City, Pa., led a group of Oil City pilots in an aerial demonstration for presidential candidate, Wendell Willkie.

CARL HUBBELL, ace pitching member of the New York Giants during the summer months and an independent oil operator in Fort Worth, Tex., during the winter months, has returned to his office in Fort Worth.

A. S. DONNELLY, geologist for Honolulu Oil Corp. in West Texas and stationed at Midland, Tex., has been named secretary-treasurer of the North Basin Pools Engineering Committee. He succeeds R. R. PORTERFIELD of Devonian Oil Co., Midland, who resigned after serving in that office since the committee's organization in 1939.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

There still is being published the story of the deepest well in the world, and the story writers are still locating it in Germany and giving the depth at 3,780 ft.

Orders have been issued whereby all passenger coaches on the Midland Valley Railroad will be lighted with natural gas. This is an innovation in Oklahoma, but has been tried out on several eastern railroads with success.

20 YEARS AGO

A mass meeting was held in Breckenridge, Tex., called at the request of oil men operating in the Stephens County fields, to discuss a proposed 15-day shutdown. Production has reached the pipe-line capacity of 85,000 bbl. daily and a minimum of 30 wells are due to be completed in the next 2 weeks, resulting in an immense wastage of oil.

California is facing an oil shortage, with no company willing to contract to supply the state with 20,000 bbl. for its winter supply of fuel oil. If the oil cannot be obtained, the state may be compelled to heat its public buildings with wood or coal.

The largest Tampico, Mexico, well of the week was estimated good for 70,000 bbl. daily, and three other new producers added a total of 145,000 bbl. to the field's daily potential.

10 YEARS AGO

Operators in the Kettleman Hills, California, field, realizing that continued unrestricted drilling will result in chaos, have ratified tentatively a proposal for unit operation of the North Dome area.

The Yates, Texas, pool, with a greater potential than any field in the United States, is cited as the outstanding example of the success of proration. It has a daily potential of 5,500,000 bbl., with single wells gaging as high as 8,500 bbl. an hour.

C. M. FRANKLIN, construction and maintenance engineer, Standard Oil Co. of New Jersey, was recently retired after 23 years of service.

SAM GRINSFELDER, manager of operations of Union Oil Co. in the Gulf Coast district, was in Los Angeles last week on company business but has returned to his headquarters.

J. COLLIER HURLEY, president of the Grace Oil Co., Houston, Tex., is vacationing on the West Coast, and will visit Pittsburgh and Chicago before returning to Houston.

HENRY LINAM, president of the Standard Oil Co. of Venezuela, and CHESTER CREBBS, president of the Mene Grande Oil Co., arrived last week from Venezuela on the Grace liner Santa Rosa.

JOHN SCHULTZ, formerly drilling and production superintendent for Mammoth Producing & Refining Corp. at Clare, Mich., has joined the Cryden Petroleum Corp. at Mount Pleasant, Mich., to direct drilling and producing operations.

DR. VIRGIL R. KIRKHAM, Saginaw, Mich., delivered an address on the discovery of oil in the Basin and Thumb areas of Michigan before the Dallas Bonehead Club, an oil men's club in Dallas, Tex., Thursday, October 18.

H. F. SMITH, superintendent; F. M. BAKER, chief clerk, and W. S. KOTCH, JR., assistant clerk, all in Magnolia Pipe Line Co.'s western Wichita County, North Texas, district, will be affected by a move of the company's offices from Electra to Wichita Falls, Tex.

JACK ROWE of Wichita, Kans., has been spending the past several weeks on business in the Illinois fields.

MAX ROBERTS, Midcontinent Map Co., has spent the past month in the field with a crew mapping Williamson County, Illinois.

C. W. STUDT, geologist for the National Refining Co., with headquarters in Wichita, Kans., has been gathering data on the situation in Illinois for the past several weeks.

FORREST S. CROCKETT, formerly of Houston, Tex., and now in charge of the land department in Mississippi for Vaughey & Vaughey, with offices in Jackson, was married October 17 to Miss Olive Alexander Cauthen, of Canton, Miss.

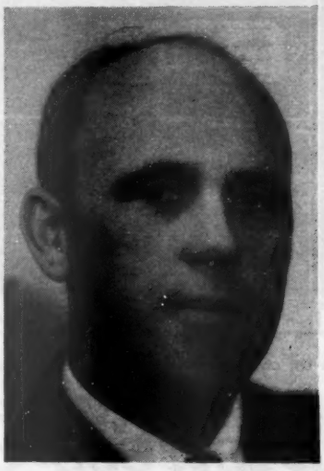
E. J. KENNEDY, assistant to the secretary of the A.I.M.E., accompanied CHESTER NARAMORE to Los Angeles in connection with the fall meeting of the Southern California section, and both have left for Tulsa, where another sectional meeting will be held.

C. P. WATSON, formerly scout for Sinclair Prairie Oil Co. in the Texas Panhandle, and now in the company's Enid, Okla., district, has been elected vice president of the Oklahoma district of the National Scouts' and Landmen's Association. He is also chairman of the Enid District Scouts' Association.

DR. GAYLE SCOTT, president of the Society of Economic Paleontologists and Mineralogists and professor of geology at Texas Christian University, Fort Worth, Tex., delivered an address before the Fort Worth Geological Society in Fort Worth Monday, October 21. His subject was "The Correlation and Relationship of the Texas Midway."

New Division Manager

Harry A. Ells, newly named manager of Cities Service Oil Co.'s natural-gasoline and chemical divisions at Bartlesville, Okla., will assume his new duties November 1. Mr. Ells was born and reared in Bellingham, Wash. He was graduated from Leland Stanford University in 1922 and entered the employ of Cities Service to work on construction at the Ibex, Tex., plant in 1923. He helped to build the Ibex, the Sallyards, Kans., and the Burbank, Okla., natural-gasoline plants.



HARRY A. ELLS

From Sallyards, he was transferred to operations and was located at Burbank, where he was later made assistant superintendent. He also served as superintendent at the Thrall and Green, Kans., plants, and he started the first Seminole, Okla., plant.

He came to Bartlesville in September 1926 as construction engineer for the gasoline division, a position that he held until he was made operating superintendent in 1931. He has been general superintendent since January 1937.

In his new appointment, Mr. Ells succeeds E. L. Peck, who has resigned to engage in reorganizing a ranch operation.

Activities of the newly appointed division manager in general industry groups includes membership on several committees of the Natural Gasoline Association. Mr. Ells is a member of the Bartlesville Chamber of Commerce, and for further diversion from the duties of his position he engages in golf, swimming and maintenance of an attractive lawn at his home. He has two sons.

ARTHUR F. CORWIN, vice president, Socony-Vacuum Oil Co., spoke at a meeting of the company's 20-Year Club last week in New York. Mr. Corwin, a member of the executive committee, has had 41 years of service.

GORDON M. MICHLER, of the Standard Oil Co. of New Jersey, and HAROLD D. HUMPSTONE, president, West India Oil Co., returned from Chile on the Grace liner Santa Lucia which docked in New York October 21.

GORDON L. FARNED, superintendent of Baytown refinery of Humble Oil & Refining Co., completed 20 years' service with the company the past week and was presented with a diamond-studded 20-year service pin by the company.

CAPT. JOHN E. TREACY, who is being held at Bucharest by Rumanian authorities, was a native of Chatham, Ont., and drilled in the Turner Valley field between 1911 and 1914. He has been connected with the oil business in Rumania for over 20 years.

DR. M. M. SLOTNICK, in the geophysical department of Humble Oil & Refining Co., at Houston, Tex., addressed the Houston section of the American Institute of Electrical Engineers last week. Mr. Slotnick discussed "Seismic and Gravity Methods in Petroleum Geophysics."

M. H. "MIKE" BUSH, drilling superintendent, Bahrein Petroleum Co., is on a tour of United States oil fields. He plans to visit North Central, Gulf Coast and West Texas and Illinois and Michigan fields before sailing from Los Angeles, Calif. on November 17. Some of the properties under the supervision of Mr. Bush received a severe bombing from Italian-German planes over the week end.

V. H. KELLY, vice president of Union Oil Co., journeyed up from Los Angeles to Seattle to present C. L. TOSTEVIN, of the company's sales department, with his 35-year service pin. Mr. Tostevin claims to have started working for the company when "raising the hay to feed the horse to raise the hay" was of prime importance.

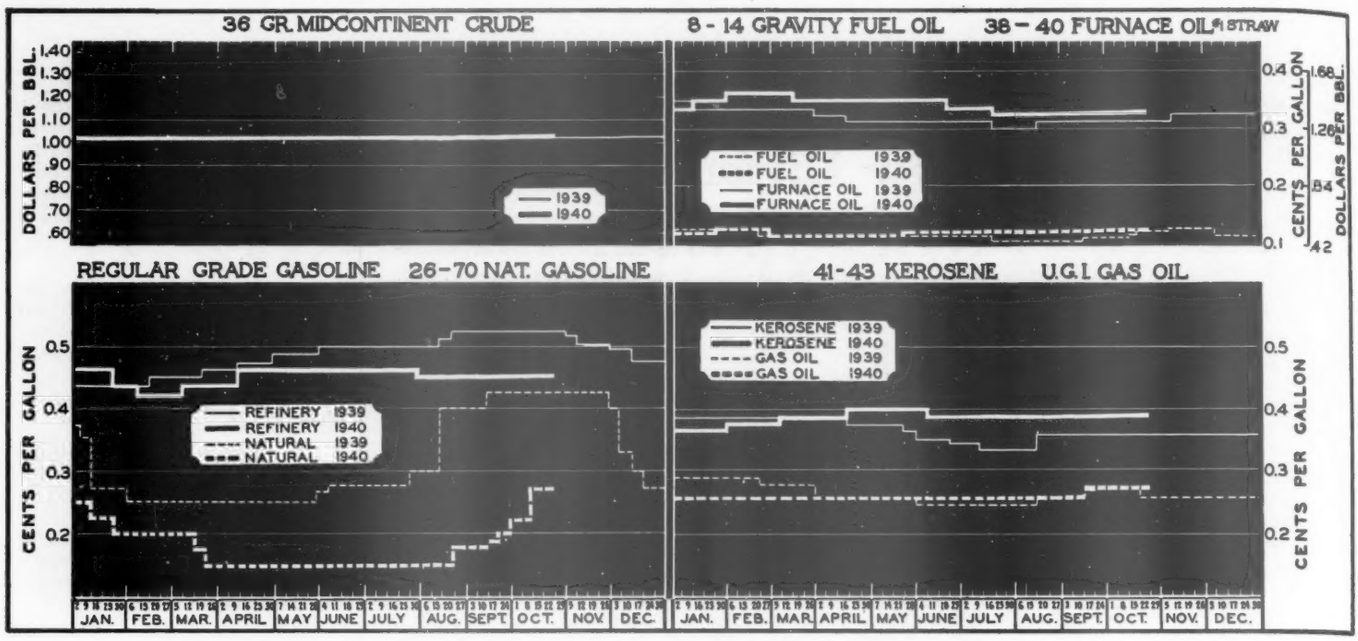
Shifts: H. E. GRANBERRY, engineer, Magnolia Petroleum Co., from Terrell, Tex., to Waxahachie, Tex.; WILLIS M. DECKER, engineer, Cities Service Oil Co., from Columbus, Tex., to Hallettsville, Tex.; K. M. LAWRENCE, geologist, Amerada Petroleum Corp., from Jasper, Ala., to Tuscaloosa, Ala.; B. A. LAGARDE, engineer, Texas Co., from Salem, Ill., to Houston, Tex.; T. C. CRONKHITE, superintendent, Adams Oil & Gas Co., from Centralia, Ill., to Vandalia, Ill.; C. E. BREHM, geologist, Kingwood Oil Co., from Effingham, Ill., to Mount Vernon, Ill.; JOE McMAHON, geologist, Benedum-Trees Oil Co., from Pecos, Tex., to Mount Vernon, Ill.; ARTHUR C. BOYCE, vice-president, Darby Petroleum Corp., from Monterey, Mass., to New York City; J. C. SPENCER, geologist, Humble Oil & Refining Co., from Lucedale, Miss., to Hattiesburg, Miss.; J. E. HOLCOMB, geologist, Coastal Oil Finding Co., from Gulfport, Miss., to Greenville, Ill.; W. M. BILLS, engineer, Sun Oil Co., from Laurel, Miss., to Biloxi Miss.; J. H. KRUEGER, geologist, Hill & Hill, from Burlington, Wis., to McAllen, Tex.; LEON KERNS, engineer, George R. Kerns, from Hamilton, Mich., to Dale, W. Va.

PAUL WEAVER, chief geophysicist for the Gulf Oil Corp., Houston, Tex., delivered a paper on "Radioactivity of Sedimentary Rocks and Its Stratigraphic Significance" before the Louisiana Geological Society at Lake Charles last week.

E. R. BROCKWAY will on November 1 be transferred to the new Fort Worth, Tex., office of Devonian Oil Co., where land and geological operations will be handled for the Fort Worth basin. R. R. PORTERFIELD, of Midland, Tex., district geologist with the Devonian company there, will divide his time between the Fort Worth and West Texas offices.

DR. J. C. MORRELL, assistant director of research for the Universal Oil Products Co., and DR. H. H. WENSKE, patent technologist for the same company, have been assembling data on petroleum refining, with special emphasis on catalysis which they will present before the Illinois Institute of Technology as a course of evening lectures. These will start late in the fall at Chicago.

W. H. GALLAHER, head of the exploration and production departments for N. K. P. M., from The Hague, Holland, was a visitor in Tulsa last week on an inspection tour to study exploratory and producing methods in the Mid-Continent area. He was accompanied by officials of the company from the Netherlands East Indies, where the company has holdings. These were JEFF DAVIS, production superintendent; E. W. BELTZ, chief geologist, and BERT BRUSH, drilling superintendent. Also in the party were E. W. BERLIN, of the production department, and H. A. GIBBON, of the geological department, of Socony-Vacuum Oil Co., New York City.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Disappearance of Distress Gasoline Strengthens Group 3 Market Tone

By H. STANLEY NORMAN

TONE of the refinery-gasoline market has improved over the past few days and the betterment appears well supported from a standpoint of current offerings. The improvement has been confined to sentiment within the industry. Even the most confirmed optimists in the ranks do not anticipate any substantial move upward in refinery-gasoline prices during the off-consuming season now at hand, particularly in light of stocks which are still unwieldy.

The market improvement is more in the form of diminishment of negative factors rather than appearance of positive elements. Until a few days ago there was a considerable volume of low-octane gasoline offered at scattered points within the Group 3 territory at prices below the general market. Most of this "distress" material failed to measure up to standard specifications in some minor characteristic. Most of the substandard motor fuel has been eliminated.

Seasonal Depression Lagging

Motor-fuel demand from most sections normally served by Group 3 refiners is exceeding seasonal expectations. Consumption is lower than at the peak of the summer motoring season, but automobile operators in all parts of the country are apparently taking full advantage of the mild autumn.

The Bureau of Mines estimate for motor-fuel demand in November, issued from Washington this week, forecasts domestic requirements of 49,900,000 bbl. of gasoline next month. The November calculation represents a decline of more than 5.8 per cent from the October estimate but is 5.5 per cent greater than the actual for the same month a year ago.

One factor in the bureau's calculation encouraging to Gulf Coast refiners and indirectly to operators at interior points is the forecast that motor-fuel exports have probably reached a floor. Exports of gasoline in November are estimated at 1,700,000 bbl., which is 100,000 bbl. higher than for October but still 860,000 bbl. less than actual offshore shipments a year ago.

Motor fuel which prior to the European war moved in export has backed up into the domestic market and has exerted a depressing influence for many months. There is no outlook for substantial improvement in the motor-fuel export situation but the domestic market cannot but benefit from an arrest of almost uninterrupted declines.

Motor-fuel movement into the Chicago and other northern consuming centers has continued this week at rates only slightly below the summer peak. Direct distribution to consumers in the northern districts is reported higher than seasonal expectancy which maintains active interest of jobbers in the Group 3 spot market.

Interest is keen in light fuel oils, but there is general agreement within the trade that cooler weather is necessary before this market can make a sustained advance. Inquiries from contract customers and spot-market purchasers of distillates indicate to refiners, however, that light fuels are due for a brisk play when demand becomes more acute.

Distillate Supplies Tight

Stocks of distillate fuels are tightly held by refiners who, in the main, are unwilling to sell at less than the top of the present quotations. The feeling existing among refiners for many weeks continues that the distillate-fuel market will move forward sharply when winter weather converts passive interest of buyers into urgent demand.

Natural gasoline is strong and sparingly offered at quotations advanced last week. Manufacturers are offering 26-70 material, basis Group 3 (Oklahoma), at 2.75 cents. Supplies available at the present quotations are strictly limited. Buyers seeking price concessions from Oklahoma and North Texas manufacturers report little success.

Residual fuel oils occupy approximately the same market position as held by distillates. Demand from heavy industry engaged in manufacture of defense materials is gradually developing and may be expected to continue upward on a modest scale for several months.

Increases in light fuel-oil prices along the North Atlantic coastline reported this week are normally the forerunner of advances in other parts of the country.

Refined Oil Market Barometer

Advance of distillate fuel-oil prices in the northeastern section of the country is considered the forerunner of the winter-market increase. Group 3 refiners report an active interest from buyers in distillate fuels, but mild weather prevails in most of the territory normally supplied which tends to delay forward movement of prices.

MID-CONTINENT: Absorption of substandard gasoline stocks has improved market tone.

GULF COAST: Coastwise movement of motor fuel and distillates continues at higher rates.

CALIFORNIA: Natural gasoline, diesel, and gas oils are slightly firmer on high side of market.

PENNSYLVANIA: Gasoline supply tight. Neutrals and bright stocks moving freely.

CHICAGO: All grades of fuel oil are firm at present quotations. Demand is growing more active. Gasoline consumption good.

Eastern Fuel-Oil Market Starts Anticipated Winter Advance

By J. P. O'DONNELL

NEW YORK, Oct. 21.—The long-anticipated improvement in fuel-oil markets came last week when Socony-Vacuum Oil Co., Inc., announced an advance of 0.2 cent throughout its upper New York and New England marketing areas and at the same time raised kerosene prices 0.3 cent in the same areas. This increase in tank-wagon prices became effective Friday, October 18, and in the short interim, refinery and terminal prices in the New York Harbor area have not changed though a corresponding improvement is expected.

Last week's advance was the first upward revision in fuel-oil prices of the season. While the New York tank-wagon price remains at 6 cents per gallon, the new prices in the upper New York and New England areas range from 6.3 cents in Albany and Boston to 7.2 cents in Manchester, N. H. The advance in fuel-oil prices, which affected all grades of heating oil, was ascribed more to the recent advances in Gulf-to-north-of-Hatteras tanker rates than to increased demand. Demand, however, has picked up with the arrival of subfreezing weather as far south as upper New Jersey but this gain has been offset to a large degree by the substantial quantities of heating oil held in storage in the East Coast area.

Stocks of gas oil and distillate fuel oil in the East Coast area on October 1 reported at 18,254,000 bbl. by the American Petroleum Institute, an increase of 336,000 bbl. from the previous week. In contrast to this, a year ago stocks were but 13,211,000 bbl. on October 14, a decline of 221,000 bbl. from the week before. Thus in 1940 in mid-October, additions are still being made to storage in this area whereas a year ago withdrawals were necessitated at the same time. The increase in production and storage of fuel oils continues to exert a stabilizing influence that was absent a year ago.

The 0.3-cent advance in kerosene tank-wagon prices was attributed to the same causes. Kerosene prices in the New York-New England marketing area now range from 7.3 cents per gallon at New Haven to 8.8 cents in Manchester, N. H. An increasingly good demand for kerosene has been reported in these areas and with increased requirements offset by ample supplies available, tanker rates from the Gulf have been the deciding factor.

After advancing rapidly in the past few weeks, tanker rates were unchanged last week. They are currently reported at 26 cents for gasoline, 27 cents for kerosene and 28 cents for light fuel oil. The easing off in the upswing which saw rates advance 5 cents per barrel in the space of 10 days was attributed to a lack of chartering. No charters in the Gulf-to-north-of-Hatteras trade have been reported in the past week. Lack of business is attributed in a large measure to a scarcity of boats, no clean tankers being reported available until after mid-November, and to high asked rates. Owners were reported to be asking as high as 30 cents per barrel for clean tankers for gasoline, 5 cents above the last reported paid. On this basis, asked rates for kerosene and light fuel oil would be 31 and 32 cents per barrel, respectively.

Refinery and terminal prices of both light and heavy fuel oil and kerosene in the New York Harbor again remained unchanged. No. 2 fuel oil is quoted at 4.1 cents, kerosene at 4.8 cents per gallon, tank car, and Bunker C fuel oil at $1.25 per barrel by major suppliers and at $1.15 by several small companies. Earlier in the week Standard Oil Co. of New Jersey announced that it would extend the current top contract price of $1.15 per barrel for Bunker C to the first of the year with advances of 10 cents in the first and an additional 10 cents in the second 6 months of 1941. The announcement stated:

"The maximum price for bunker fuel oil at North Atlantic ports for the first 6 months of 1941 will be $1.25 per barrel. The top price for the second 6 months will be $1.35 a barrel. In addition to naming these very attractive prices for bunker fuel oil for 1941, for the balance of this year the company is revising the maximum price to $1.15 per barrel. The spot-market price remains unchanged at $1.25 per barrel. At the United States Gulf the maximum price for bunker fuel oil during the first 6 months of 1941 will be $1 per barrel and the maximum price for the second 6 months will be $1.10 per barrel."

The unsettled condition of the gasoline market from a retail standpoint has been evidenced in recent weeks by changes in both tank-car and tank-wagon prices, contrasting with the comparative stability of refinery and terminal prices. The most recent change was a reduction of 0.4 cent in the New York tank-wagon price and at the same time this price at Portland, Me., was dropped to 5.6 cents. Portland is now the lowest point in the area with a tank-car price of 5.6 cents per gallon. The spot-market price of 72-74-octane gasoline in the New York Harbor area was unchanged at 5 to 5½ cents, the low on the eastern seaboard. Prices at southern points ranged as high as 6½ cents at Charleston and Norfolk.

Gulf Coast prices were reported unchanged though indications were evident that the position of gasoline was weakening due to reduced shipments to North Atlantic ports. The export market continued without feature of major incident though it was reported in Washington early last week that the Maritime Commission would approve the chartering of 100,000 tons of tankers to Russian interests. No announcement was made of the product that would be exported but it was presumed here that the tankers would transport California gasoline to Vladivostok.

(Continued on Page 103)

Gulf Coast Markets

HOUSTON, Tex., Oct. 22.—Impending general crude cuts created a feeling of uneasiness in Gulf Coast refinery markets at the opening of the week that tended to impede any trading that might have been brewing. A number of sizable contracts principally for independent-refinery crude supplies and sales of burning and fuel oils, were being held up pending development of the cuts.

There seems to be no inclination on the part of refiners and other suppliers to weaken in their quotations, which continued firm. The relief given coastal gasoline storage by heavy buying this month, and the general tightness of burning and fuel oils, are believed sufficient to offset for the time being any disturbing effects of possible crude cuts.

Four additional cargoes of gasolines for coastwise movement were reported sold on the Gulf Coast the past week for early shipment. This augments the 22 cargoes reported sold previously. Last week's sales included various grades of gasolines, ranging from around 68 octane to above 74 octane with some house brands, and one cargo of 80 octane, research method. Prices ranged from below 4 cents to 4¼ cents, averaging around 4 cents.

Tentative figures of the Gulf Coast Refiners Association being compiled Monday showed gasoline stocks of member companies have been reduced more than 1,250,000 bbl. dur-

(Continued on Page 103)

A.P.I. Weekly Refinery Statistics

Week Ended October 19, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	19,477,000	12,582,000	18,444,000	547,000
Appalachian	91.0	3,205,000	529,000	596,000	119,000
Ind., Ill., and Ky.	90.2	13,818,000	3,524,000	5,668,000	582,000
Okla., Kans., and Mo.	76.9	6,244,000	2,260,000	1,597,000	255,000
Inland Texas	59.6	1,628,000	1,535,000	404,000	122,000
Texas Gulf	89.2	12,942,000	8,443,000	8,739,000	874,000
Louisiana Gulf	97.6	2,764,000	1,840,000	1,330,000	105,000
N. Louisiana and Ark.	51.5	472,000	549,000	341,000	47,000
Rocky Mountains	56.0	886,000	382,000	131,000	40,000
California	87.3	15,280,000	74,582,000	10,541,000	494,000
Total reported	86.2	76,716,000	106,226,000	47,791,000	3,185,000
Est. unreported	.....	4,940,000	1,915,000	1,260,000	340,000
*Est. total	.....	81,656,000	108,141,000	49,051,000	3,525,000
*Est. total previous wk.	.....	81,927,000	108,449,000	48,743,000	3,555,000
*Oct. 20, 1939	.....	72,418,000	114,052,000	39,337,000	3,580,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended October 12, 1940	261,511,000 barrels
Week ended October 5, 1940*	262,551,000 barrels
Week ended October 14, 1939	229,870,000 barrels

Figures do not include stocks of heavy, unrefinable California crude. *Revised.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of October 22, 1940

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Incl. tax	Kero. tank wag.
Chicago, Ill.	15.6	13.6	4.5	10.0
Decatur	14.6	13.1	4.5	9.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	‡10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	‡10.2
Duluth, Minn.	16.4	14.9	4.5	10.8
Mankato	16.0	14.5	4.5	9.0
Minneapolis	16.0	14.2	4.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.3
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	7.6
Grand Rapids	13.2	11.2	4.5	9.0
Saginaw	14.9	13.4	4.5	9.1
Evansville, Ind.	16.6	15.1	5.5	†9.8
Indianapolis	16.8	14.8	5.5	†10.0
South Bend	16.8	15.3	5.5	†10.0
Fargo, N. D.	18.2	16.7	5.5	11.6
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.8	13.3	4.5	8.0
St. Louis*	15.2	13.2	4.5	9.0
St. Joseph	14.9	13.0	4.5	7.9
Wichita, Kans.	13.8	12.3	4.5	7.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Oct. 7, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex fuel oil A, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex fuel oil B, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Cons'r tank wag.	Gasoline: Dlvided dlr.	Gasoline: Incl. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Cons'r tank car	Gasoline: Dlr. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Atlantic City	11.00	12.60	4.5	7.4
Newark	11.00	12.60	4.5	7.4
Annapolis, Md.	13.35	14.35	5.5	9.5
Baltimore	12.75	13.75	5.5	8.5
Cumberland	14.15	15.15	5.5	10.0
Washington, D.C.	11.00	12.00	3.5	9.5
Danville, Va.	14.95	17.45	6.5	11.0
Norfolk	13.75	16.25	6.5	10.5
Petersburg	14.05	16.55	6.5	11.2
Richmond	14.05	16.55	6.5	10.5
Roanoke	15.25	17.75	6.5	11.0
Charles'n, W. Va.	14.55	17.05	6.5	12.6
Parkersburg	13.85	16.35	6.5	11.2
Wheeling	14.85	17.25	6.5	11.8
Charlotte, N. C.	16.80	16.5	7.5	11.8
Hickory	17.45	18.95	7.5	12.3
Mount Airy	17.30	18.80	7.5	12.2
Raleigh	16.65	16.50	7.5	11.5
Salisbury	16.95	16.00	7.5	11.9
Charleston, S. C.	14.75	17.25	7.5	9.75
Columbia	15.60	18.10	7.5	11.5
Spartanburg	16.30	18.80	7.5	12.7

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Cons'r tank wag.	Gasoline: Net dlr.	Gasoline: Incl. tax	Kero. tank wag.
Atlanta, Ga.	14.0	14.0	7.5	8.0
Augusta	17.0	17.0	7.5	9.5
Macon	15.0	15.0	7.5	9.0
Savannah	16.0	16.0	7.5	9.0
Birmingham, Ala.	16.0	16.0	8.5	9.0
Mobile	15.5	15.5	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.0	16.0	7.5	9.0
Vicksburg	16.0	16.0	7.5	8.5
Jacksonville, Fla.	15.0	15.0	8.5	8.0
Miami	15.5	15.5	8.5	8.0
Pensacola	17.5	17.5	9.5	8.0
Tampa	15.0	15.0	8.5	8.0
Lexington, Ky.	15.5	15.5	6.5	9.0
Covington	13.5	13.5	6.5	9.0
Louisville	15.0	15.0	6.5	8.5
Paducah	14.0	14.0	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline: Cons'r tank car	Gasoline: Dlr. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.5	13.5	5.5	10.0
Pittsburgh	13.0	15.0	5.5	10.5
Allentown	13.0	14.5	5.5	10.5
Erie	12.5	15.0	5.5	10.0
*Scranton	12.5	14.25	5.5	10.5
Altoona	13.0	15.0	5.5	10.5
Dover, Del.	...	14.0	5.5	10.5
Wilmington	...	13.5	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank truck	Gasoline: Serv. sta.	Gasoline: Incl. tax	Kero. tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13.5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Cons'r tank car	Gasoline: Dlr. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Albany	11.7	12.7	5.5	7.6
*Met. New York, Manhat., Bronx, Queens, Brklyn., Staten Island	12.2	13.2	5.5	7.6
Buffalo	12.4	13.4	5.5	7.5
Rochester	12.8	13.4	5.5	8.1
Syracuse	12.5	11.7	5.5	8.5
Portland, Me.	11.1	11.0	5.5	7.7
Manchester, N.H.	12.2	12.5	5.5	8.8
Burlington, Vt.	12.3	12.3	5.5	8.2
Boston, Mass.	10.1	11.1	4.5	8.0
Worcester	10.7	11.5	4.5	8.1
Hartford, Conn.	10.9	11.5	4.5	7.8
New Haven	10.6	11.0	4.5	7.3
Providence, R. I.	10.1	11.6	4.5	8.0

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Denver, Colo.	14.5	5.5	10.5
Grand Junction	16.5	5.5	12.5
Pueblo	15.5	5.5	9.0
Casper, Wyo.	16.5	5.5	11.5
Cheyenne	14.5	5.5	11.0
Billings, Mont.	17.5	6.5	12.0
Butte	15.5	6.5	13.0
Great Falls	17.5	6.5	12.0
Helena	15.5	6.5	12.5
Salt Lake, Utah	16.0	5.5	14.0
Boise, Idaho	†18.6	6.5	16.0
Twin Falls	19.6	6.5	16.5
Albu'que, N. M.	*16.0	6.5	9.5
Roswell	14.0	7.0	8.0
Santa Fe	17.0	7.0	9.5

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Cons'r tank car	Gasoline: Dlr. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
New Orleans, La.	14.25	16.75	8.5	‡11.0
Baton Rouge	15.25	17.75	8.5	‡10.5
Alexandria	15.25	17.75	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.25	17.75	8.5	‡10.0
Shreveport	14.00	16.50	8.5	‡9.0
Knoxville, Tenn.	18.50	20.00	8.5	12.5
Memphis	16.50	18.00	8.5	11.0
Chattanooga	18.00	17.35	8.5	12.0
Nashville	17.50	16.50	8.5	11.0
Bristol	18.75	18.75	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Texarkana, Ark.	13.5	5.5	6.0
Fort Smith	12.5	5.5	6.5
Little Rock	16.0	8.0	8.0
Muskogee, Okla.	13.5	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Incl. tax	Kero. tank wag.
Omaha	17.4	15.9	6.5	9.5
McCook	17.5	15.4	6.5	9.9
Norfolk	17.5	15.4	6.5	9.9
North Platte	17.8	15.5	6.5	10.2
Scottsbluff	18.4	16.0	6.5	10.8

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline: Tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.5	8.0	17.0
Hamilton, Ont.	24.5	8.0	17.0
Winnipeg, Man.	27.5	7.0	22.5
Brandon, Man.	28.9	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	26.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

Tank-Wagon Changes

Socony-Vacuum Oil Co., Inc., advanced kerosene tank-wagon prices 0.3 cent per gallon October 18 at Albany and Syracuse, N. Y.; Portland, Me.; Manchester, N. H.; Burlington, Vt.; Boston, Mass.; Hartford and New Haven, Conn., and Providence, R. I.

Standard Oil Co. of New Jersey reduced the dealer tank-wagon price for regular gasoline 0.5 cent October 10 at Charlotte, N. C.

Standard Oil Co. of Kentucky reduced the consumer and dealer price on regular gasoline 1 cent per gallon October 12 at Atlanta, Ga.

Socony-Vacuum advanced metropolitan New York tank car and tank-wagon gasoline prices 0.4 cent per gallon October 22.

Standard Oil Co. of New Jersey reduced the dealer tank-wagon price of regular gasoline 0.5 cent per gallon at Charlotte, N. C., effective October 10.

Standard Oil Co. (Kentucky) reduced the consumer and dealer tank-wagon price of regular gasoline 1 cent per gallon at Atlanta, Ga., effective October 12.

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of October 22, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400 grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400	.03½	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.05
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.05½	.07¼
54-58 U. S. Motor	.04½	.06¼

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.05	.06½
Philadelphia	.05¾	.06½
Boston	.05¼	.05½
Baltimore	.05½	.07
Charleston, S. C.	.05¾	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.04	.04¼
70-72 octane	.03⅞	.04¼
68-70 octane	.03¾	.04
65-67 octane	.03⅝	.04

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02¾
Grade 18-55		.03¼

NORTH TEXAS—

Grade 26-70		.02½
Grade 18-55		.03

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03½	.03⅝
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.03⅞	.04
41-43	.03¾	.03⅞

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

46	.04⅞	.05
45	.04¾	.04⅞

CHICAGO (Based on Group 3)—

42-44	.04	.04¼
41-43	.03⅞	.04⅛

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43		.048

GULF COAST (domestic)*—

41-43		.04

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03⅛	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42		.03½
No. 1 straw, 38-40		.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03	.03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1		.048
*No. 2		.041
*No. 4		.041

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02¾	.03
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5 low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.03
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.50	.55

PENNSYLVANIA (inland refineries)—

36-40	.04	.04½

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.50	.75
10-17 (high sulfur)	.45	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.75	.80

GULF COAST—

No. 2 fuel	.03¼	.03½
43-47 diesel	.03¼	.03½
48-52 diesel	.03½	.03⅝
53-57 diesel	.03⅝	.03⅞
58-and-above diesel	.03⅞	.04
Diesel bunkers		1.50
Bunker C (bulk cargoes)		.80
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.042
28-30 diesel (lighterage 6¼c per bbl.)		1.70
28-30 diesel (tank cars)		.041
Bunker C (to ocean-going ships in N. Y. Harbor	1.15	1.25
Industrial fuel (tank cars)		.03875

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.18
150-160 D, 0-10		.13½
150-160 D, 10-25		.13
100-110 D, 0-10		.13
100-110 D, 10-25		.12½
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.14½
15 pour point		.13½
25 pour point	.12	.14
Steam refined:		
600	.07	.08
650	.08	.10
600 flash	.09	.11
630 flash	.11	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.08½
200-3		.08½
250-3		.10
280-3		.10½
250-4		.10
300-3½		.11
350-3½		.11½
400-3½		.12
500-3½		.12½
600-3½		.13
100-2½ paraffin oil, 10-25		.05¼
10-25 pour point:		
200-3		.08
250-3		.09½
280-3		.10
280-4		.09½

GULF COAST—

Pale oils:		
100-3	.05½	.05½
200-3	.07¼	.07¼
300-3	.07½	.07¾
500-3½	.08¼	.08½
750-3½	.08⅝	.08⅝
1,200-3½	.08¾	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06⅞	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅝	.08½
1,200-5-6	.08½	.08⅝

CALIFORNIA (moving to dom. market)

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07½	.08
400-3-4	.07½	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis., at 70° F., 3 color, 400-405 flash:		
Zero pour point		.22½
10 pour point		.21½
15 pour point		.20½
25 pour point	.19	.20
200 vis., at 70° F., 3 color:		
Zero pour point		.24½
10 pour point		.23½
15 pour point		.22½
25 pour point	.21	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.02½	.03

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale		.02¾
124-126 (A.m.p.) w.c. scale		.02¾

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p.) wax	.0560	.0570
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.02½	.02¾
124-126 (A.m.p.) y.s.	.02½	.02¾
Petrolatum in barrels, carload lots:		
Dark green	.02125	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05125
Snow white	.05125	.06000
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.03⅝
60-62 400		.03⅝
61-63 390	.03⅞	.04
64-66 375	.03⅞	.04

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.05½	.05¾
65-69 octane	.05¼	.05½
60-65 octane	.04½	.05

KEROSENE

GULF COAST—

41-43 water white	.04	.04½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.15½	.16½
630 S.R. unfiltered	.16½	.17½
600 flash, S.R.	.17½	.18½
650 flash, S.R.	.20	.21
Bright stock:		
Light, 25 pour point	.20½	.21

NEUTRAL OIL

200-3 color		.27
150-3 color	.25	.25½

PARAFFIN WAX

NEW YORK (prices per lb.)—

123-125 A.m.p.		.05600
125-127 A.m.p.		.05600
128-130 A.m.p.		.05850
133-135 A.m.p.		.06150
135-137 A.m.p.		.06400
Crude scale:		
124-126 w.s.	.02⅝	.02¾
124-126 y.s.	.02⅝	.02¾

MARKET RECORD OF ACTIVE OIL STOCKS . . .

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended Oct. 19 High	Week ended Oct. 19 Low	Week ended Oct. 19 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
58½	38½	43½	43	43½	Amerada Corp.	788,675	N.P.	50cQ	10-31-40	$2.00	$1.56	$2.07	74½	50	78	55
27⅛	18¼	21⅞	21⅛	21¾	Atlantic Refining	2,663,999	$25	25cQ	9-16-40	1.00	1.66	1.40	24¾	18⅛	27⅝	17⅜
16⅝	8½	10½	10⅜	10⅜	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	1.39	—.85	21	10¼	23¾	12¼
13⅜	7⅛	8⅛	7⅞	8	Barnsdall Oil Co.	2,558,779	$5	15c	9-9-40	.90	.76	1.26	19½	11⅛	21⅜	10¼
8⅛	6½	5¾	5⅝	5⅝	Consolidated Oil Corp.	13,751,726	N.P.	12½cQ	11-15-40	.80	.55	.55	9⅞	6½	10⅜	7
25	16⅛	17⅞	16¾	17	Continental Oil of Delaware	4,682,572	$5	25cQ	9-30-40	1.00	1.35	1.10	31½	19⅞	35¾	21¼
6⅞	3⅜	3¾	3¾	3¾	Houston Oil	1,098,618	$25	....	10-17-30	....	.43	.83	9⅜	4½	9¾	5
14⅜	9	10	9¾	9¾	Lion Oil Refining	435,815	N.P.	25cQ	10-10-40	1.00	1.50	2.09	18⅛	10	25⅛	15⅝
17⅝	11½	12⅞	12½	12½	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	1.42	.56	18	11⅛	22⅝	12¼
11	7⅛	9⅛	8¾	9	Mission Corporation	1,378,645	$10	40c	12-15-39	.65	.87	1.04	14⅞	8¾	17¾	10⅝
9¾	4⅝	6⅛	5¾	6	National Supply	1,155,517	$10	....	12-22-37	....	—.87	—.79	15½	5⅝	23	12½
8¾	5⅜	6⅛	5⅞	6⅛	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	—.10	.25	10½	6	14⅞	8⅝
8¼	5½	5⅝	5½	5⅝	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	.81	1.22	11⅞	7	15⅞	10¼
10½	6¾	..	..	..	Pan American Pet. Trans.	4,702,945	$5	....	12-21-39	....	1.10	.08	8⅜	5	9¼	6¼
41¾	27⅛	35½	34½	34¾	Phillips Petroleum	4,449,052	N.P.	50cQ	11-30-40	2.00	2.21	2.03	46½	31¼	44⅜	27¼
22¾	15	16⅛	16	16⅛	Plymouth Oil Co.	1,038,633	$5	35cQ	9-30-40	§1.40	2.38	2.59	24	17⅛	25⅝	15
11½	7	7⅛	6⅞	6⅞	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	1.11	.38	11⅜	6¼	13½	8¼
8⅜	5⅞	7	7	7	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.65	.51	10¼	6⅝	9⅞	5
20	11	13¼	13¼	13¼	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-14-40	1.00	1.40	1.52	24⅜	15½	27½	15½
13⅛	7⅝	9⅜	8½	9⅜	Shell Union Oil	13,070,625	N.P.	25c	7-16-40	.50	.77	.72	17¼	9⅞	18⅜	10
23¼	12¼	18	17¼	18	Skelly Oil	995,349	$15	50c	12-20-40	.75	1.99	2.27	29½	15½	34¾	18½
12½	7⅛	8⅛	7⅝	7⅞	Socony-Vacuum	31,206,071	$15	25cSA	9-16-40	.50	1.10	1.29	15⅛	10¼	16⅜	10⅜
26⅛	16¼	17¾	16⅝	17¾	Standard Oil of California	13,003,953	N.P.	25cQ	9-16-40	1.10	1.38	2.22	33⅝	24¼	34⅞	25⅛
29	20¾	25¼	24⅛	24⅝	Standard Oil (Indiana)	15,272,020	$25	50c†	9-16-40	1.25	2.23	1.82	30	22¾	35½	24¾
46½	29⅞	33¼	31½	31⅞	Standard Oil of New Jersey	27,280,998	$25	1.00†	6-15-40	1.25	3.26	2.86	53½	38	58⅜	39⅜
65⅞	46¾	51⅞	51¾	51¾	Sun Oil	2,434,863	N.P.	25cQ	12-16-40	1.00	2.74	1.07	66	45¾	65½	45
2½	1¼	1⅜	1¼	1⅜	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.04	.24	3⅝	1¾	4¼	1¾
47⅝	33	34⅝	33⅜	34	Texas Corp.	10,876,139	$25	50cQ	10-1-40	2.00	3.02	2.13	50¾	32½	49⅝	32⅝
4¼	2½	2⅞	2¾	2⅞	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.69	.86	5¾	3¼	5⅞	2⅝
8⅝	5½	5⅞	5⅝	5⅞	Texas Pacific Coal & Oil	888,236	$10	10c	9-3-40	.40	1.00	1.16	11⅜	7	12½	7
12	8¾	9½	9⅜	9½	Tide Water Associated	6,371,827	$10	15c	9-3-40	.80	1.05	1.28	14¼	9½	15¾	10½
17½	12	12⅝	12¼	12¼	Union Oil Co. of California	4,666,270	$25	25c	8-10-40	1.05	1.25	1.47	19¾	15½	22½	17⅛
29⅞	22¾	27¼	26½	26⅝	Union Tank Car Co.	1,177,381	N.P.	45c	9-3-40	1.30	2.07	1.16	24¼	20⅛	23½	20
3⅝	1¾	1¾	1¾	1¾	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	....	.77	.52	4¼	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

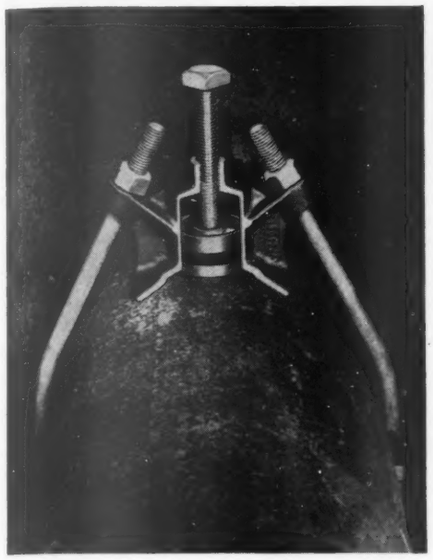
1940 High	1940 Low	Week ended Oct. 19 High	Week ended Oct. 19 Low	Week ended Oct. 19 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
10¾	4½	5¾	5⅛	5¾	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	$0.14	—.22	11¾	5½	11¾	5
3¼	1⅜	1¾	1⅝	1¾	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.95	—.14	7¼	2½	10¼	4⅞
43	28	38¾	37¼	37¼	Buckeye Pipe Line Co.	200,000	$50	$1	9-14-40	$2.50	3.13	2.36	34¾	26½	39	22½
117	95	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-23-40	6.00	7.87	5.32	130	108⅝	128	97
6¾	4	5¾	5⅝	5⅝	Cities Service (new)	3,703,978	$10	....	6-1-32	....	.68	.23	9¼	4¼	11	5⅛
2⅛	1	..	..	..	Cosden Petroleum	465,332	$1	....	.....	....	....	....	2¼	½	2⅜	⅞
24¼	11⅝	12¾	12	12¼	Creole Petroleum	6,974,356	$5	50cSA†	6-15-40	1.00	1.38	1.64	28	16¾	27½	17½
4⅜	2⅞	3⅝	3½	3½	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	.03	.69	7⅛	3⅝	10¼	5⅛
2	1¼	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.37	—.91	2⅝	1½	3½	1⅛
31	23	..	..	..	Eureka Pipe Line	50,000	$50	50c	11-1-40	2.00	.63	—.37	23	15⅛	31	16
39⅞	25⅛	29	27⅞	28¾	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-40	2.00	1.69	1.43	45⅛	29¼	46⅞	33
68	47⅛	56½	55½	56½	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-40	2.00	3.33	3.98	71	52½	72⅝	56
12⅝	5½	8	7⅜	7⅜	Imperial Oil of Canada	26,965,078	N.P.	37½c†	6-1-40	1.00	.71	.96	17	11⅜	19½	14⅛
7¾	3	3¾	3⅝	3⅝	Indiana Pipe Line	300,000	$7.50	20c	11-15-40	.50	.33	.47	7¼	5½	9⅜	6
19¾	8¼	10¼	10⅛	10⅛	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.19	1.98	27½	17	31¼	21
2¾	1⅝	1⅞	1¾	1¾	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.06	.14	3¾	2⅛	5	2⅛
10¾	7⅝	9¾	9⅜	9¾	Lone Star Gas	5,518,347	N.P.	30c	12-21-40	.70	.98	.88	10½	7⅛	10⅜	6⅝
6¼	3⅜	4½	4¼	4¼	Louisiana Land & Exp.	2,966,762	$1	10c	9-14-40	.35	.22	.45	7⅝	4	9⅜	6⅛
17	9½	9½	9½	9½	Margay Oil Corp.	149,943	N.P.	25cQ	10-10-40	1.00	1.52	2.28	17	14½	24	16
8½	6½	7	7	7	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.99	.93	8¾	6⅝	9¾	6⅝
6¼	4⅞	5⅜	5⅛	5¼	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.70	.62	6	4⅞	5¾	4½
13⅛	10	11¾	11⅜	11¾	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-40	1.00	.95	.84	14	11¼	14⅝	11½
12½	8¾	10⅛	9⅞	10⅛	National Transit	509,000	$12.50	50c	6-15-40	.85	.91	.88	9½	7¼	9¼	6½
1¼	¾	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	1⅝	1	2⅝	1½
7¾	5¼	6¼	6¼	6¼	New York Transit	100,000	$5	25c	9-20-40	.40	.88	.16	6	4	4½	3⅛
9⅞	6	7¾	7¾	7¾	Northern Pipe Line	120,000	$10	40c	12-2-40	.30	.31	.24	7	4½	6	4
5½	2½	2⅞	2¾	2¾	Pantepec Oil	2,856,872	$1	....	.....	....	....	....	7⅝	4	7¾	3½
3¼	1¼	1⅞	1⅞	1⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.70	.17	5	1¼	4½	1⅝
2½	1½	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	....	.16	.29	3	1⅞	4	2⅛
11¾	4¾	5	4¾	5	Southern Pipe Line	100,000	$10	25c	9-3-40	.30	.25	—.27	4⅞	3½	5⅜	3¼
44	28	34	34	34	South Penn Oil	1,000,000	$25	37½c	9-27-40	3.00	2.84	1.44	40½	26¾	39	28¾
35	21	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50c	9-16-40	2.00	2.06	—.41	23	18	22¼	16½
20⅞	16½	18¾	18⅜	18⅝	Standard Oil of Kentucky	2,604,790	$10	25c	9-14-40	1.30	1.53	1.45	20⅛	17¼	18⅜	15
41⅜	26¼	31⅞	31¼	31⅝	Standard Oil of Ohio	753,740	$25	25c	9-14-40	1.50	6.64	1.81	32¾	17	22⅜	16¼
2	1⅜	1½	1⅜	1½	Sunray Oil	1,975,876	$1	5c	5-1-40	.10	.25	.23	2⅜	1⅜	3¼	2
3	2	..	..	..	Texon Oil & Land	936,024	$2	10c	9-30-40	.10	.49	.56	4	2⅝	5¼	3½
3⅜	2	2¼	2¼	2¼	Transwestern Oil Co.	750,000	$10	....	.....	....	—1.42	.12	6	2½	5¼	2⅝
2⅛	⅛	1⅜	1⅛	1¼	United Gas Corp.	7,818,959	$1	....	.....	....	—.55	—.51	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

EQUIPMENT PROGRESS...

New Plug Clamp Stops Leaks In High-Pressure Lines

M. B. Skinner, of South Bend, Ind., pioneer pipe manufacturer, now offers a revolutionary new "Skinner-seal vented plug clamp" for use on extremely high-pressure pipe lines. Pressure "vents" while clamp is being placed in position; then the piston plug shuts off the leak as easily—as quickly and positively—as closing a valve. No chance of injury or damage.

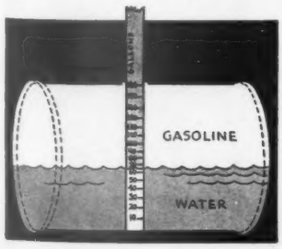


Close-up view of the vented plug clamp installed on a pipe line

The head of the clamp consists of a malleable-iron cylinder resting on a pressure-distributing base. This is anchored to the pipe by bolts and strap. The cylinder is fitted with a rubber-faced metal piston, operated by a heavy thrust screw—gasket surface 2⅛ in. in diameter. To prevent "burning" of gasket in the last stages of shutting off, the lower rim of the gasket is armored with a brass band. This also keeps rubber from escaping through vent. Bottom of the gasket is ground to fit curvature of pipe, and piston is keyed in the cylinder to prevent rotating out of position while thrust screw is being tightened.

Positive Detector of Water in Gasoline or Fuel-Oil Tanks

A new inexpensive method of determining the amount of water in gasoline and fuel-oil storage tanks has recently been developed by the Watertecter Co. of Buffalo, N. Y. Condensation, or the sweating of the tank walls produces varying amounts of water which accumulates at the bottom beneath the gasoline. As the level of gasoline drops in the tank, the danger of the pump drawing the water becomes more and more imminent. Obviously, serious difficulties arise when this occurs. The longer this water is allowed to accumulate in the bottom of the tank the greater is the danger of reaching the water level.



"Watertecter," a chemically compounded paste, spread in a thin layer from its tube container upon the gage stick will indicate the water level in any tank. This paste in its original form is pink in color, but 10 seconds after immersion in the tank the water will change the color to white. The paste is impervious to the reaction of the gasoline and will retain its original pink color above the water line. Once this exact level is determined it is possible to remove all water by the use of a hand pump without waste of gasoline.

Develop New Air Hose for Extreme Hot-Oil Service

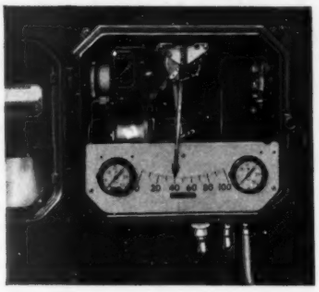
Recommended for use where excessive hot-oil conditions are encountered, B. F. Goodrich Co., Akron, Ohio, announces the addition of a new air hose made with a synthetic tube and rubber cover. It is known as Type 54. Laboratory tests indicate that the synthetic tube used in this construction should give two to three times longer service life when exposed to the same conditions as a tube made of natural rubber. The hose is built with a smooth green abrasion-resistant cover.

Condor Whipcord Endless Belts Stocked in Standard Sizes

The Manhattan Rubber Manufacturing Division, Passaic, N. J., announces that Condor whipcord endless belts are now available from stock for prompt shipment in a number of sizes and in two styles. The two styles which are carried in stock are capable of handling drives from ¼ to 25 hp. and are applicable to more than 1,500 different drives.

Taylor Remote Pneumatic Transmission Systems

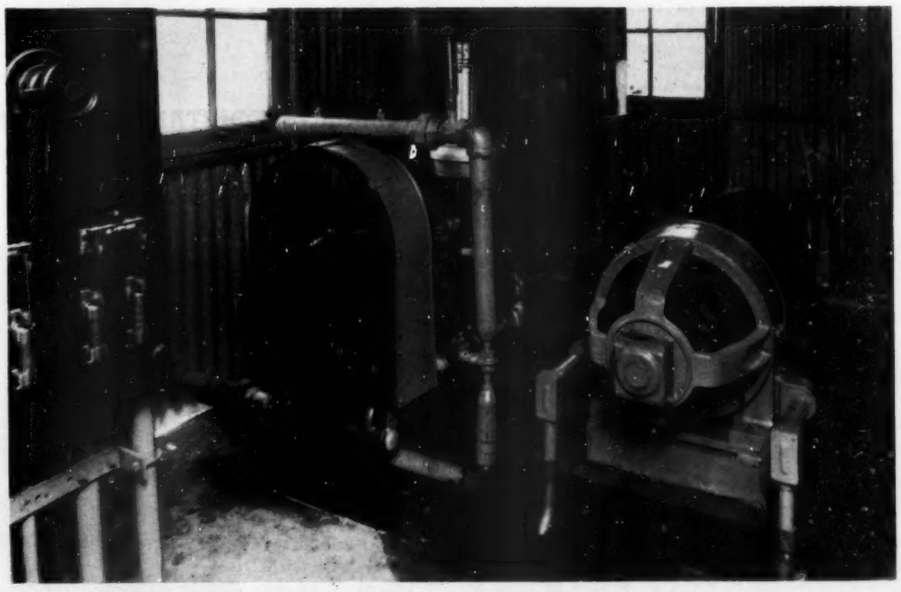
A simple, accurate and economical means of indicating, recording or controlling process variables remote from the point of measurement is offered by the new Taylor remote pneumatic transmission systems. This new system of remote transmission is particularly advantageous where it is desirable to correlate temperature, pressure, flow or liquid-level data on a centralized panel or in a control room.



The system utilizes standard Taylor instruments. It may consist of one or two transmitters connected to a receiver; or one or more receiving instruments, not necessarily near each other, and as far as 1,000 ft. from the transmitter. Transmitters or receivers may be indicating, recording or controlling types. Air pressure is the transmitting medium, with ¼-in. o.d. copper tubing as the means of connection.

Bulletin 98156, describing the many advantages of the systems in the measurement and control of pressure, rate of flow and liquid level, is available from the Taylor Instrument Cos., Rochester, N. Y.

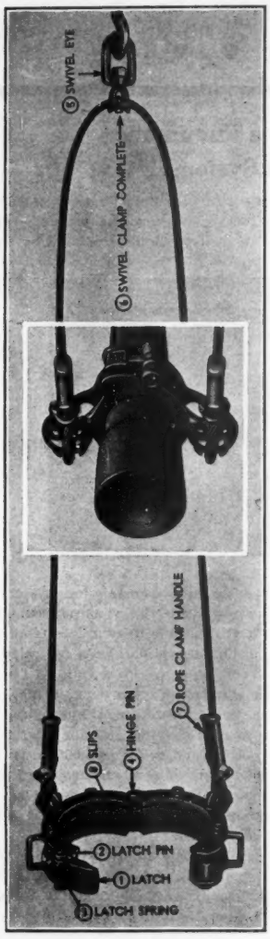
FORD V-8 ENGINE RUNS 24 HOURS A DAY IN CALIFORNIA PLANT



A Ford V-8 engine used by the Del Rey Oil Co., Venice, Calif., to drive a 15-kw. generator formerly driven by steam has been running continuously 24 hours a day for several months. The engine operates at 1,450 r.p.m. and furnishes power for the company's casinghead-gasoline plant, also power for a 5-hp. motor which operates a compressor. The drive is direct between engine and generator. A special water-cooling system keeps the engine at the proper temperature.

B-J Elevator for "Tailing In" Single Joints of Casing

This elevator eliminates use of the rope sling and prevents the pipe from slipping or falling with damage to the pipe or injury to the crew. The Type P elevator is made in two halves, hinged at the center, and latched opposite the hinge by a sturdy stirrup-type latch. The bore of the elevator contains slips set to receive a 5° tapered external upset casing joint.



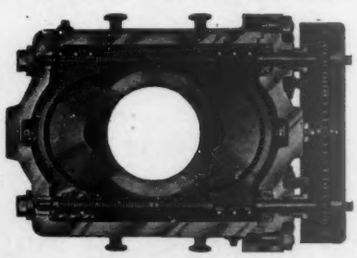
A flexible wire-line bail having a clamp and swivel at the top keeps the elevator in a true, balanced position, and the ends of the wire line are protected by hand guards. The free spinning swivel on the clamp has an eye sufficiently large to accommodate any desired means of attaching it to the hook or hoisting elevator.

The Type P elevator is used as follows: When the slips are being set in the spider (after the previous joint has been set in the hole) one of the crew closes the elevator around the next joint on the derrick floor. Then, when the block and hook are raised, the joint of pipe is lifted to the required height where it hangs in a true vertical position so that the pin may be easily and safely lowered into the coupling without danger of developing a crossthread.

Complete details as to price, construction and operation are available from Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles, Calif.

New Cellar Control Gates Are Stronger and More Compact

Simplicity, greater strength, new sealing efficiency and heavier ram construction are features of the Type 38 cellar control gate now being furnished by Shaffer Tool



Works, Brea, Calif, for control of drilling wells. The gate is provided with Type 40 self-centering rams for closing around pipe or with Type 40 rams for complete shutoff. These new gates retain all the salient features of previous designs of Shaffer cellar control gates and meet the requirements of latest drilling practice.

The Type 40 self-centering rams center small-size drill pipe effectively in the bore of the gate. These improved rams are made with protruding angular guides alternately top and bottom and as the rams move toward their closed position these angular guides engage the drill pipe and move it into central position in the ram.

With these new gates the seal can be effected against both the top and bottom inside faces of the gate body or can be furnished with the seal against the top inside face only and the bottom inside face provided with channels for sand drainage. As the rams are moved to the closed position the abutting rubber faces of the ram blocks is stopped. The ram-block holders continue their movement and the circular band of rubber around the ram blocks is compressed by the inward movement of the ram-block holders and thus extrudes this band of rubber against the inside faces of the gate body.

TRADE LITERATURE

WALTER KIDDE & CO., INC., 140 Cedar Street, New York City—A new illustrated bulletin showing the complete line of foam equipment. Much interesting and useful information is compressed in this four-page folder, and the generators and other equipment sold under the name Kidde-FOAM are illustrated and completely described. Eight tables on capacity requirements and recommended sizes are also a feature of this bulletin, which may be obtained from the company headquarters or from their branch offices and dealers.

COCHRANE CORP, Seventeenth and Allegheny Avenue, Philadelphia, Pa.—Publication 2990, a new eight-page liquid-level bulletin covering six different styles of mechanical and electric-operated liquid-level meters. Four electric-operated types particularly designed for remote service, including float, differential pressure and bourdon spiral systems are included. Application drawings and technical data are arranged in sections devoted to each of the various available instruments.

SKF INDUSTRIES, INC., Philadelphia, Pa.—36-page catalog entitled "SKF Spherical Roller Bearings," containing helpful information on bearing selections, time-saving computations, and drawings of various types of roller-bearing design. Also 20 pages of illustrations devoted to mining, steel, paper, oil, crushing, railroad and allied fields.

PYOTT FOUNDRY & MACHINE CO., 328 North Sangamon Street, Chicago.—Catalog V-500, a 112-page handbook on V-belt-drive selection, featuring Pyott's copyrighted "Economy Tables" which enables drive users to select readily the cheapest of many drive arrangements that will do a given job.

SULLIVAN MACHINERY CO., Michigan City, Ind.—Bulletin D-23, describing a portable heavy-duty core drill for structure testing, electrical logging or shallow production. This drill (No. 200) has a rated capacity of 2,000 ft., a hoisting range of 15 to 325 ft. per minute and a single-line rope pull of 10,000 lb. (based on 1,800 r.p.m. engine speed).

Key Paste Available In Kit-Size Cans

Key paste, the graphite sealing compound for thread and gasket connections on lines carrying oily liquids and high-pressure steam, has been made available in a new handy kit-size can by the manufacturer, Key Co., 2681 McCasland Avenue, East St. Louis, Ill. This new package, with a brush applicator in the lid, contains ⅝ lb. of Key graphite paste, is approximately 2½ in. in diameter by 4 in. tall and can be conveniently carried in tool kit or tool box. Inside, attached to the lid is the brush applicator, which eliminates the need for paddle, stick or extra brush to apply the compound on the thread or gasket.

Key graphite paste expands when heated and is ideal for high-pressure steam lines and for all steam-plant and boiler connections . . . or where high-temperature service is required. It is an oil-proof seal and should be used where either hot or cold oily liquids are involved—gasoline, kerosene, etc., and for sealing threads and gaskets on internal-combustion engines, pumps and oil burners. Key paste requires only water for thinning and joints made up with this sealer are easily disconnected without damage to threads or gaskets. It is listed by the underwriters.

Automatic Control for Compressors Used for Refrigeration

In conjunction with H. C. Cooper, research engineer, and the Gas Machinery Co., of Cleveland, Ohio, Clark Bros. Co., Inc., Tulsa, has developed an automatic control for gas-engine compressors used to provide refrigeration for cooling natural gas which is being liquefied.

The initial installation of the new controllers was recently made on two Clark 600-hp. and one Clark 500-hp. angle-type compressors in the Cleveland storage plant of the East Ohio Gas Co. The controllers keep the refrigeration developed by the compressors in accurate step with the amount of gas being liquefied. These engines, which are the Clark supercharged two-cycle type, were chosen for the most difficult service encountered in this latest development of the natural-gas industry.

PITTSBURGH EQUITABLE-MERCO EXPANDS FIELD SERVICE

As a service and convenience to their many customers in the Mid-Continent and Midwest, the Pittsburgh Equitable Meter Co. and subsidiary, the Merco Nordstrom Valve Co., Pittsburgh, Pa., now have in operation, from their Tulsa and Chicago offices, completely equipped field service trucks. These trucks are fitted with the necessary tools, lubricants, and test apparatus to handle properly the field maintenance of Emco and Nordstrom products. The Tulsa truck is in charge of Wayne Renfro, service engineer, who is thoroughly trained in factory methods and maintenance procedure on all the companies' products.

Capt. A. E. Higgins, sales manager, also announced that similar units would be placed in service in the near future in other sections of the country.

Wayne Renfro, service engineer, with field truck

AMONG EQUIPMENT MEN...

McPeake Made Manager of Oilwell Export Division

Richard H. McPeake has been appointed sales manager of Oil Well Supply Co.'s export division. He will maintain his headquarters at "Oilwell's" New York office, 30 Rockefeller Plaza. Following graduation from the U. S. Naval Academy in 1930, McPeake spent 2 years in the Mid-Continent oil fields with Carter Oil Co. and 6 years in Peru with International Petroleum Co. He joined the "Oilwell" organization in September 1938 and has since been engaged in export sales and engineering work. He has traveled extensively and is well acquainted with the oil fields of South America.

Bronzan Made Baash-Ross Assistant General Manager

B. Bronzan, sales manager of Baash-Ross Tool Co., has been given the additional post of assistant general manager, according to an announcement made by L. F. Baash, president. Mr. Bronzan, who has had long service with the company, has advanced steadily through the various departments to his present position. His headquarters will continue to be the Los Angeles, Calif., office, although he will, as in the past, cover the other plants and service branches of the company by periodic trips.

B. BRONZAN

BUSINESS NOTES

Walter W. Williamson has recently joined the industrial V-belt division of the Dayton Rubber Manufacturing Co., Dayton, Ohio, in the capacity of sales representative in the Mid-Continent oil fields, with headquarters at 519 Santa Fe Building, Dallas, Tex. Mr. William son has had wide experience in power-transmission equipment and is especially well known to oil-field and industrial accounts in the Midwest territory. Since 1914 he has been connected in various capacities with manufacturers serving both the oil-field trade and industrial plants.

J. A. Mussler, manager tubular sales for Continental Supply Co., Dallas, Tex., and J. W. Owings, field engineer of tubular division, Youngstown Sheet & Tube Co., Youngstown, Ohio, have completed a 3 weeks' trip through the Mid-Continent field where they showed motion pictures in color of the seamless process of manufacturing casing, line pipe, tubing, and drill pipe.

Link-Belt Speeder Corp., Chicago, announces the appointment of the Tulsa Machinery Co., Tulsa, as authorized distributor for the complete line of Speeder and Speed-o-Matic shovels, draglines, cranes, ranging from a fast, mobile ⅝-yd. unit to a heavy-duty 3-yd. machine.

Kobe, Inc., Appoints Mid-Continent Division Sales Manager

Kobe, Inc., Huntington Park, Calif., manufacturers of the Kobe hydraulic pumping system, announces the appointment of H. K. Browning as division sales manager, in charge of sales in the Mid-Continent division, with headquarters in Tulsa. The office of C. M. Rader, division manager, will continue in Oklahoma City.

H. K. BROWNING

Mr. Browning's experience in technical sales problems started in 1925 when he joined the A. M. Byers Co. of Pittsburgh, Pa., after attending Cornell University's school of civil engineering. During his association with the Byers company, Mr. Browning successively held the positions of division manager of sales in St. Louis, manager of Pacific Coast sales, and later, manager of oil-country sales, with headquarters in Pittsburgh. In 1934 Mr. Browning's interest in oil-country corrosion and fatigue problems led to his connection as sales manager with the S. M. Jones Co. of Toledo, Ohio, which position he has held for the past 5 years. During this time he was responsible for the application and development of field technical studies of beam-pumping problems.

C. M. Rader, division manager, in announcing Mr. Browning's association with the company, said that this was a primary step in an expansion plan necessitated by the increasing application of Kobe pumping systems as a standard method of oil recovery in practically all types of operations.

Unit Rig Appoints Morrow As Purchasing Agent

Hugh S. Chancey, president of the Unit Rig & Equipment Co., Tulsa, announces the appointment of H. C. Morrow as purchasing agent and traffic manager. Mr. Morrow will also be responsible for personnel.

Coming to Tulsa from Dallas, Tex., Mr. Morrow brings with him a wide experience in years of service with some of the leading firms in the Southwest. After graduation from Baylor University and service in the World War, he became connected with the Gulf States Utility Co. at Beaumont, Tex., where he was employed for several years as purchasing agent. Later he was connected in the same capacity with several companies operated by the American Republics Corp., and afterwards joined the organization of Simms Oil Co. where he remained for a period of 11 years prior to its purchase by the Tide Water Associated Oil Co.

H. C. MORROW

Roger H. Clapp Promoted By Roebling Company

The John A. Roebling's Sons Co., Trenton, N. J., announces the appointment of Roger H. Clapp, formerly Philadelphia branch manager, as assistant general manager of sales, with headquarters in Trenton.

Mr. Clapp, who was born in Worcester, Mass., in August 1893, gained his first knowledge of the wire business with the American Steel & Wire Co. in Worcester, where he spent 6 years in the mills and 8 years in sales work. In 1923 he became sales manager of the wire department of the Wickwire Spencer Steel Co. in New York City. Later he became eastern district sales manager for Wickwire, and, in 1932, was promoted to the sales managership of its Pacific Coast division.

Mr. Clapp came to the Roebling company in 1936 and was appointed manager of the Philadelphia branch where he remained until the present change occurred.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the October 3 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.15
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	1.85

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Hill, California* Signal	Oklahoma, Kansas	Coast, Texas Gulf
14-14.9	$0.65	....	....
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.86
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective Feb. 1, 1940.

Crude-Oil Price Changes

The Sohio Corp., Cleveland, has increased the flat price 3 cents per barrel to $1.03 for crude oil purchased in the Storms area of Illinois. The new price is retroactive to October 1.

North Louisiana and Arkansas crude oils above 34 gravity were reduced October 17 by Standard Oil Co. of Louisiana, Lion Oil Refining Co. and Stanolind Oil & Gas Co. The reductions ranged from 1 to 6 cents per barrel with the highest gravity oils suffering the heaviest cuts. A few fields in which crude was previously purchased on a flat-price basis have been placed on a graduated gravity table. The new postings by Standard and Stanolind, which purchases only in Caddo Parish, Louisiana, are shown below:

NORTH LOUISIANA AND SOUTHERN ARKANSAS

(Posted by Standard Oil Co. of Louisiana, Stanolind Oil & Gas Co. and Lion Oil Refining Co.)

(Effective 7 a.m. October 17, 1940)

	1	2	3	4	5
Below 21	$.55	....	....	$.75	$.91
21-21.9	.57	....	....	.77	.93
22-22.9	.59	....	....	.79	.95
23-23.9	.61	....	....	.81	.97
24-24.9	.63	$.73	$.83	.83	.99
25-25.9	.65	.75	.85	.85	1.01
26-26.9	.67	.77	.87	.87	1.03
27-27.9	.69	.79	.89	.89	1.05
28-28.9	.71	.81	.91	.91	1.07
29-29.9	.73	.83	.93	.93	1.09
30-30.9	.75	.85	.95	.95	1.11
31-31.9	.77	.87	.97	.97	1.13
32-32.9	.79	.89	.99	.99	1.15
33-33.9	.81	.91	1.01	1.01	1.17
34-34.9	.83	.93	1.03	1.03	1.19
35-35.9	.84	.94	1.04	1.04	1.20
36-36.9	.85	.95	1.05	1.05	1.21
37-37.9	.86	.96	1.06	1.06	1.22
38-38.9	.87	.97	1.07	1.07	1.23
39-39.9	.88	.98	1.08	1.08	1.24
40 and above	.89	.99	1.09	1.09	1.25

Column 1 applies to Atlanta, Buckner, Magnolia, Schuler (Jones sand and Reynolds lime) and Village fields.

Column 2 applies to Caddo, De Soto, Sabine, Fouke, Homer, Miller County, Sugar Creek, El Dorado (West, South and Rainbow) and Schuler (Morgan sand).

Column 3 applies to Bunkie, Eola and Olla.

Column 4 applies to Bayou Des Glaise, Bayou Mallet, Choctaw, Darrow, Jeanerette, Lirette, North Crowley, Port Barre, Potash, Roanoke and St. Martinville.

Column 5 applies to University (Baton Rouge).

Big Creek, Dorcheat, McKamie distillates (sour)	$.95
Smackover (heavy)	.73
Cotton Valley distillate	1.10
Cotton Valley crude	1.05
Cotton Valley (Holloway sand crude)	1.10
Rodessa, Shreveport (Cross Lake)	1.05

Note—Stanolind purchases in Caddo Parish only.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

SPECIALIZED Geophysical investigations conducted for petroleum promise. In touch with many opportunities to and for development of drilling blocks. P. O. Box 364, Fort Worth, Texas.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

EAST TEXAS Trinity sand wildcat starting. Close in leases afford you ten to fifty for one bets next sixty days. E. CROFT, PROCTOR, TEXAS.

WILL SELL OR LEASE
All oil, gas, coal and other mineral rights in property known as Eagle Coal Co.; 12,000 acres; located at Stearns, McCreary Co., Kentucky. Railroad runs through property. Address: Harry A. Dempsey, oil and gas producer, 518 Leader Bldg., Cleveland, Ohio.

CASH paid for producing wells. Will help finance drlg. shal. gas land. Describe full, or no att'n paid. Box 93, Tulsa, Okla.

ILLINOIS' ONLY OIL REPORT
Estab., June 1937. Every detail every test Ill. and Ind. each Tuesday and Friday. C. I. O'Neill, Effingham, Ill. Box 394.

NEW MEXICO
STATE OIL AND GAS LEASES
NEW block of leases located in San Juan Co., where pools have been opened which produce the highest gravity crude known in the World today. Rental 15c per acre. Write for information. Buy direct and save those dollars. No middle man to pay; no salesman to bother you.
HARRY S. WRIGHT
New Mexico State Lessee
Wright Bldg., Farmington, New Mexico.

WANT 100% PROVEN LEASE, 1500 ft. or less. Reliable Oklahoma party will drill offset or producing lease. Write Box A-102, The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION FOR SALE BY COMPANY OWNER
11 Bartlesville sand wells on 180 acres Nowata County, Oklahoma. Pumping $200.00 per month income. All acreage proven. Good lease house and water. Ideal proposition if you desire to live upon and operate. Brokers and Junk Dealers need not inquire. $7,500.00 Cash. Box A-201 The Oil and Gas Journal, Tulsa, Okla.

Leases and Drilling Blocks

CRANE CO., oil possibilities, cheap fee land, 3 mi. E Ward Gulf-Western drilling. J. G. SMITH, 215 Littlefield Building, Austin, Texas.

SOUTH Louisiana Producing Royalties: Wildcat leases and shooting blocks, inquiries invited. John Derryberry, Box 304, DeRidder, La.

MISSISSIPPI
SALESMEN, BROKERS, Cheap Lands in fee with all minerals rights in well located counties where Major companies have large lease holdings. Write Box 754, Jackson, Mississippi.

WELL LOGS, Drillers' logs of approximately 4,000 wells drilled in New Mexico are available from Well Log Division, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. Write for price list C.

SOUTHEAST NEBRASKA Drilling Blocks on structures open for deal with parties that qualify able to drill well for equitable division of acreage. Good geology. J. M. Livingston, 317 North 11th Street, Nebraska City, Nebraska.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont, oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn, Wyo. Free catalog samples on request. Burkhart Ptg. & Sta. Co. 115 S. Cinn. Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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JOHN MORRIS, Box 5411, Philadelphia, studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

Wanted

INFORMATION as to the use of Bentonite in oil well drilling fifteen to twenty years ago. Box K-900, The Oil and Gas Journal, Tulsa, Oklahoma.

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REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, California.

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ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

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For Sale—Crude Oil

CRUDE OIL FOR SALE, 34°, 15,000 bbls. daily, contract two to 5 years, $1.10 under hatch Gulf port. J. L. Arlitt, 17 E. 42nd, New York.

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REFINERY EXECUTIVE thoroughly trained and experienced in design construction and operation of refineries and the manufacture of all products. Efficient, energetic, diplomatic. Desires permanent connection or design construction and operation on partnership basis. Now employed. Box K-675, The Oil and Gas Journal, Tulsa, Oklahoma.

EXPERIENCED chemical engineer now employed desires position with progressive firm. B.S. degree in engineering. 12 years practical experience processing, management and refining operations. Qualified refinery engineer and Supt. Can furnish references. Address Box K-672, The Oil and Gas Journal, Tulsa, Okla.

YOUNG man wants to start at bottom and study selling oil field supplies or equipment. Box K-800, The Oil and Gas Journal. Tulsa, Oklahoma.

PRODUCTION Superintendent — High class practical man, background of several years with one major company. Well rounded experience in rotary and cable-tool drilling and production. Address Box K-793, The Oil and Gas Journal, Tulsa.

SUPERINTENDENT, Chemist or Operator desires position with a reliable company. 15 years experience in the construction, maintenance of refineries. Box A-200, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

CHEMICAL OR PETROLEUM ENGINEER with experience as crude oil emulsion treater. Location: Southwest. State age, education, experience and salary required. Address Box A-104, The Oil and Gas Journal, Tulsa, Oklahoma.

WELDING engineer, graduate metallurgist with experience in welding practice. Battelle Memorial Institute, Columbus, Ohio.

ANALYST — GAS—PETROLEUM LAB. experienced in Podbielniak, Orsat and combustion work. Knowledge other Petroleum tests desirable but not essential. Eastern location. Box A-106, The Oil and Gas Journal, Tulsa, Okla.

CHEMICAL ENGINEER experienced in refinery engineering, including heat transfer and rectification calculations and high pressure process design. Location: Southwest. State age, education, experience, and salary expected. Address Box A-103, The Oil and Gas Journal, Tulsa, Okla.

VACANCY for an experienced instrument man in a mid-west refinery. Electrical engineer preferred. State experience and education in application.
BOX A-101
The Oil and Gas Journal, Tulsa, Okla.

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19 Quarter Sections of Extra Good Land, scattered thro 2 Townships in Baca Co. Colo. near Kans. line. Got in 1889. Never been plowed, no improvements, level deep soil, no stone or gravel, good crops adjoining. 7 quarters in Artesian water district. 12 quarters on good oil structure never been drilled. Oil rights goes with this land. Heir must sell. Bargain. $5.00 per acre. One or all quarters. Come see it.
Ira L. Pennington, Walsh, Colo.

Equipment Wanted

WANTED—2 Bullard Vertical Boring Mills New Era Type, 36" or 42"—Nolan Sales Corp., Tulsa, Oklahoma.

WANT 7 or 8 miles first class 3" or 4" line pipe—either threaded or plain ends. Give condition and quote lowest cash price.
PAGE LEWIS
Beaumont, Kansas.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE

30-TON S/G LIMA GASOLINE, 0-4-0 SWG. LOCO. NEW 1931, GOOD COND. ROLLER BEARING. Immed. Delivery. SEND US YOUR INQUIRIES FOR ANY KIND OF LOCOMOTIVES.

IRON & STEEL PRODUCTS, INC.
13412 S. Brainard Ave.
Chicago, Ill.

"*Anything* containing IRON or STEEL"

SPECIAL PIPE OFFERINGS

20,000 ft.—6" Line Pipe—19 lb. at Melon, Texas
73,000 ft.—4" Line Pipe—10.79 lb. at Breckenridge, Texas
15,000 ft.—3" Line Pipe— 7.62 lb. at Breckenridge, Texas
10,000 ft.—8" Line Pipe—28 lb. at Tulsa, Oklahoma
5,000 ft.—6" Line Pipe—19 lb. at Tulsa, Oklahoma
100,000 ft.—4" Line Pipe—10.79 lb. at Tulsa, Oklahoma

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry and H. J. Galamba
Riverview at Second, Kansas City, Kansas

Robt. W. Duden
2100 S. Union, Tulsa, Oklahoma

NOTICE OF SALE

TRUSTEE'S SALE
IN THE
UNITED STATES DISTRICT COURT
FOR THE
WESTERN DISTRICT OF LOUISIANA

In the matter of:

DESOTO CRUDE OIL PURCHASING CORPORATION Bankrupt. — No. 6281 In Bankruptcy

By virtue of an order to me directed by Honorable J. M. Grimmet, Referee in Bankruptcy, dated October 10, 1940, I will sell at public auction the following described property, to-wit:

Approximately 52 miles of pipe lines, located in Rusk and Smith Counties, Texas, together with all lateral pipe lines, gathering lines, fittings, pumps, machinery, tanks, materials, equipment and supplies, used in or appurtenant to the operation of the business of gathering and purchasing crude oil, lately conducted by the bankrupt in Rusk and Smith Counties, Texas, consisting of about 55,865 feet of 6 inch pipe, about 161,565 feet of 4 inch pipe, about 29,384 feet of 3 inch pipe, about 1,000 feet of 2⅛ inch pipe and about 24,767 feet of 2 inch pipe, etc., as set forth specifically in the petition of trustee to sell.

Also, all storage tanks and tank farms, pump stations, loading racks, buildings and appurtenances thereunto belonging, rights of way grants, ground leases and easements, situated in Rusk and Smith Counties, Texas, over which the pipelines are laid and on which the tanks, pumps, etc., are located, and more specifically described in the petition of trustee to sell. Inventory and petition to sell are on file in the office of Referee, Shreveport, Louisiana. Anyone interested may communicate with H. E. Harper, Trustee, Box 303, Shreveport, Louisiana.

Appraised at, ...$94,964.35

Said sale to be made free of all liens and encumbrances, liens and encumbrances to be referred to the proceeds of sale.

Said sale to take place at the Texas Street entrance of the Caddo Parish Court House, Shreveport, Louisiana, on October 28, 1940, at the hour of 11 o'clock a.m.

The trustee reserved the right to reject any and all bids on the ground of inadequacy.

Any person interested may communicate with the undersigned.

HARRY E. HARPER, TRUSTEE
516 Ricou-Brewster Building
Shreveport, Louisiana.
Box 303

ONE 7' x 12' two-door steel tool house. One 4-in-line roller bearing crown block with 36" manganese steel sheaves on 20" beams. A-1 shape. 1300 Ramsey Tower, Oklahoma City, Oklahoma.

FOR SALE

One gasoline drilling rig with two 85 H.P. Waukesha motors and unitized draw works complete.
300 sets 3" A.P.I. tool joints.
10,000 Ft. 7" O.D. 26# seamless casing, once run.
15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.
In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, La.

BANKRUPT SALES

In the District Court of the United States
For Western District of Louisiana

Re: Rodessa Oil & Refining Corporation,
Hurricane Petroleum Corporation, and
De Soto Crude Oil Purchasing Corporation,
Bankrupts

In the above matters, I have for sale properties consisting of Refineries, pipe lines, oil production, non producing leases and other items, and invite any party interested to communicate with me.

See Notice of Sale Published Elsewhere this issue Journal

HARRY E. HARPER, TRUSTEE
516 Ricou-Brewster Building or
Box 303, Shreveport, Louisiana

TRACTORS

Caterpillars, crawler type, size "35," $375; size "65" with nigger-head winch, $750; Caterpillar RD8 with bulldozer, $2000; Allis-Chalmers Model L with bulldozer $1750. Guaranteed, slightly used. O. C. Evans, Mt. Sterling, Ky.

GASOLINE Plant equipment, including Bessemer Type 8 direct driven compressors, orifice and Ironcase meters, tanks, pipe, scrubbers, towers, etc. Gilbert Pipe & Supply Co., Electra, Texas.

USED OIL TRUCKS

Mack—Diesel train—6300 Gallons.
Diamond T—6 wheeler—3000 gallons.
Diamond T—6 wheeler—1500 gallons.
International — Completely equipped—1200 gallons.
International A7F—10 to 15 ton 6 wheeler.
Diamond T Model 1600—10-12 tons 6 wheeler.
Diamond T Model 1203—10 ton 6 wheeler.
Hendrickson—Diesel train—6300 gallons.
Fruehauf Trailer — 3000 Gallon Tank.

NATIONAL TRUCK SALES, INC.
3315 Archer Avenue, Chicago, Ill.

TRANSIT and LEVEL REPAIRING

Fully equipped modern shop—all makes repaired
Low cost—service unsurpassed—all work guaranteed
Send for list of reconditioned instruments
We pay cash for used instruments

NATIONAL BLUE PRINT CO.
Union Station Bldg. Est. 1914 CHICAGO, ILL.
Chicago Sales Representative—W. & L. E. Gurley

FOR SALE—Used Gear Reducers, all sizes and types—immediate delivery. Save 60% of new net costs. Thoroughly overhauled—Fully guaranteed. Patron Transmission Co., 154 Grand St., New York City.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

FOR SALE OR EXCHANGE

Dismantling Paluxy Refinery, Talco, Texas. All types refinery equipment for sale. Will exchange portion for good lathe with 24" swing, 14 ft. bed, quick change, motor driven.

BOX 1011
Mount Pleasant, Texas.

FOR SALE

1—18 ft.—Double eccentric under pull steel Band Wheel Power and Belt Tightener—$250.00.
3—Jenson straight lift long stroke Rod Line Jacks—$50.00 each.
1—K type Star Drilling Rig complete with all tools from 10" down, including Tanks, Derrick House, Tool House, Light Plant, and Wire Lines—$2000.00.
3500 ft.—6⅝"—17# Casing.
1000 ft.—8"—24# Casing.
9000 ft.—6"—19# P. E. Line Pipe.
20,000 ft.—2"—Line Pipe.
5600 ft.—4"—8 thread Line pipe.

VEEDER SUPPLY & DEVELOPMENT CO.
Cherryvale, Kansas.

FOR SALE—USED BOILERS

3 90HP-225SWP Acme Oklahoma City
2 100HP-200SWP Lucey Oklahoma City
1 100HP-200SWP Lucey Wichita Falls

LUCEY PRODUCTS CORPORATION
TULSA

SIDEBOOMS FOR SALE

1 Cat 30 Sideboom, 1 T-40 Sideboom, excellent condition, priced reasonable, ready to work. Terms can be arranged. Write F. C. Ewing, P. O. Box 2552, Houston.

COMPLETE
CORE DRILLING UNIT

Good for 2,000 feet, mounted on 1940 Model AC403 GMC Truck, equipped with 2 speed Eaton rear axle—500 feet 2⅝" O.D. drill rod with 3" Fl'ge couplings—15 Drill bits—Offered for immediate sale—

SONKEN-GALAMBA SUPPLY CO.
Tulsa, Oklahoma

FOR SALE:
10,000 feet used 18" pipe
Plain Ends
5/16" in Thickness
Weights approximately 52# per ft.
S. L. GRUNDSTEIN & CO.
2135 So. High St. Columbus, Ohio.

Geophysical Service

HOMER L. FITCH, GEOPHYSICIST AND LOCATION ENGINEER

WHY drill dry holes? Our method only locates structures which contain oil or gas. Locations made by us will produce or no pay. Drawer 711, Brownsville, Texas.

ATTENTION. Why not locate Oil? A dry structure is not profitable. Unless we locate the Oil and Gas for you you pay us nothing for the survey. Maps and written reports furnished free. A Direct Geophysical Method that you can understand. Write Gravitational Selector, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Gulf Coast Markets

(Continued from Page 95)

ing the past 2 weeks, reflecting the late heavy buying. Additional material sold is to be moved before the end of the month, which will place these refiners in the best position they have been in during the past year. So far as indicated, none has any burdensome stocks.

It also is indicated that these coastal refiners are unusually low on kerosenes, gas oils, diesel oils, and other lighter fuels for this time of year. Bearing this out, buyers report having difficulty finding material to meet needs. In view of this, and the fact that crude reductions so far made have been directed largely to the lighter, gasoline-producing grades, burning and fuel oils are not expected to be materially affected by the price revisions.

Heavy fuels still show a tendency to accumulate and prices for these products are not overly strong.

New York Markets

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No further gains were reported in the wax market last week and prices remained at 2¾ cents, offered by most suppliers, for both export and domestic inquiries on white and yellow scale.

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